The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2187.—VOL. XLVII. LONDON, SATURDAY, JULY 21, 1877. [WITH SUPPLEMENT. { PRICE ..... SIXPENCE. PER ANNUM, BY POST, £1 4s. }

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER.
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Banks, Bonds (Foreign and Colonial), Railways, Miscellaneous, Insurance, Assurance, Telegraph, Shipping, Canal, Gas, Water, and Dock Shares.

BUSINESS negociated in Stocks and Shares not having a general market value.

BUSINESS in COLLIERY and IRON Shares, and in the principal WAGON and MANUFACTURING COMPANIES of the NORTH of ENGLAND and SCOTLAND.

BUSINESS in all the principal COTTON SPINNING Shares.

Mr. J. H. CROFTS, having now established CORRESPONDING AGENCIES in all the CHIEF TOWNS of the United Kingdom, is prepared to deal in the various LOCAL Stocks and Shares at close market prices.

ACCOUNTS FOR THE FORTNIGHTLY SETTLEMENT.

A Daily Price List, issued at 5 P.M., giving latest Quotations up to close of Market—4·30 P.M. Also, on the 1st of every month a List of all Securities currently dealt in upon the Mining and Stock Exchanges, with latest prices, current dividends, rate of interest yielded at market price, &c.

MINES INSPECTED.

BANKERS: CITY BANK, LONDON; SOUTH CORNWALL BANK, ST. AUSTELL.

SPECIAL DEALINGS in the following, or part:—

15 Argentine, £4¼.	10 East Van, £5½.	30 Pestarena, 3s. 9d.
5 Assheton, 23s. 6d.	20 Eberhardt, £6⅜.	35 Parys Mountain.
20 Aberdaunant, 12s. 6d.	15 Flagstaff, £3¼.	25 Penstruthal, 6s.
20 Bampfylde.	10 Great Laxey, £21.	15 Pennerley, 4s.
20 Chicago, £2 15s.	25 Glyn, 9s.	15 Roman Gravels, £9¼.
25 Chapel House, £2¾.	25 Holmbush, £1 15s.	25 Rookhope, 21s. 3d.
2 Clementina.	10 Hultafall.	10 Richmond, £6⅝.
10 Chontales, 8s. 6d.	40 Javali, 8s.	10 St. Harmon, £2¾.
10 Cakemore, £2½.	25 Llanrwst, £2½.	10 Tankerville, £7⅛.
10 Combmartin, 7s. 6d.	5 Leadhills.	20 Van Consols.
20 Condes of Chili, £3¼.	15 Marke Valley, 25s.	10 W. Tankerville, 20s 6d
10 D'Eresby.	30 North Laxey, 18s. 9d.	20 W. Wye Valley, £3½.
20 Exchequer, 5s.	20 Pateley Bridge, £2.	

*** HULTAFALL LEAD.—SPECIAL BUSINESS at close prices.

BUSINESS also on hand in—Bodidris, Belstone, Cesena Sulphur, Cedar Creek, Cargoll, Denbighshire, East Craven Moor, Gorsedd and Merllyn, Grogwinion, Lisburne, Last Chance, Llangan, Minera, Medlyn Moor, New Zealand Kapanga, Oakham Collieries, Pennant, Pandora, Port Phillip, Plynlimmon, Santa Barbara, South Aurora, St. Harmon, Tecoma, Wheal Newton, Wye Walley, West Wye Valley.

*** SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS(ON DEPOSIT OF TWENTY PER CENT.

FOREIGN BONDS—ARGENTINE—EGYPTIAN—RUSSIAN, TURKISH, SPANISH, PERU.
RAILWAYS—HOME AND FOREIGN.

SPECIAL BUSINESS in the above, and Fortnightly Accounts opened on receipt of the usual cover.

*** THE WAR.—The latest Telegrams from the SEAT OF WAR are received throughout the day, and also the course of the Markets from EVERY CONTINENTAL BOURSE.

JAMES H CROFTS, 1, FINCH LANE, LONDON.

AQUARIUM, HOTEL, INSURANCE, AND MISCELLANEOUS SHARES.

SPECIAL BUSINESS in Brighton Aquarium, Royal Westminster Aquarium, Yarmouth Aquarium, Crystal Palace Aquarium, Milner's Safe, Telegraph Construction, Royal Insurance, Positive Assurance, Credit Foncier, Land Mortgage Bank of India, J. P. Westhead and Co., Palmer's Shipbuilding, Newcastle Chemical, Lawes Chemical, and others.

*** BUSINESS TRANSACTED in all MISCELLANEOUS SHARES (of whatever description) having LONDON or COUNTRY MARKET VALUES.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

BRITISH LEAD SHARES.—BUSINESS in all leading Market Mines and Latest Special Information from the various districts.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

COTTON SPINNING SHARES.—BUSINESS in all OLDHAM SHARES, and in those of other DISTRICTS.

*** SPECIAL BUSINESS in the following SELECTED SHARES:—

Name of Mill.	Last four dividends, per cent.				Closing quotations. July 20. Buyers.	Sellers.
Central	26,	20,	10,	10	£ 2¾	£ 2⅝
Greenacres	30,	20,	5,	15	3½	4
Green Lane	30,	25,	20,	20	62½	67½
Oldham Twist	26,	12,	15,	5	17½	22½
Royton	30,	20,	10,	10	2	2½
Shaw	20,	16,	10,	16	2¾	2¾
Star	25,	20,	8,	14	2¾	2¾
Windsor	20,	10,	16,	10	2½	3

NOTE.—The shares of good Cotton Spinning Companies pay remunerative dividends, the mills being almost entirely conducted on the Co-operative System, under the Limited Liability Acts. With a revival in trade the present rate of dividends would be augmented.

JAMES H CROFTS, 1, FINCH LANE, LONDON.
Bankers: City Bank, London; South Cornwall Bank, St. Austell.
ESTABLISHED 1842.

MR. WILLIAM H. BUMPUS, STOCK AND SHARE BROKER, 44, THREADNEEDLE STREET, LONDON, E.C.
[Established 1867.]

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

Shareholders, intending investors, and others who may be desirous of obtaining information and advice as to operations at the present time are requested to communicate.

FOR SALE, at prices annexed:—

50 Aberdaunant, 12s. 9d.	80 Exchequer, 6s.	100 Penstruthal, 6s.
20 Argentine.	20 Eberhardt, £6¾.	25 Pateley Bridge, 33s.
30 Assheton, 26s.	15 Frontino, £3½.	15 Richmond, £6 11s. 3d.
100 Almada, 8s. 3d.	25 Flagstaff, £3 6s. 3d.	70 Rookhope, 21s. 3d.
70 Bodidris, 21s. 6d.	20 Gorsedd and Merllyn.	20 Roman Grav., £9½.
40 Blue Tent.	50 Glenroy, 20s. 6d.	10 South Condurrow.
50 Chontales, 8s.	25 Hultafall.	50 Sierra Buttes, 31s. 6d.
25 Colorado, 33s.	100 I.X.L., 9s. 6d.	10 Tankerville, £7⅜.
30 Cedar Creek, 9s. 6d.	50 Javali, 7s. 6d.	40 Tecoma, 13s. 6d.
20 Condes of Chili.	30 Kapanga, £2½.	25 United Mexican, 36s.
35 Derwent, £2¼.	50 Last Chance, 14s.	5 Van, £33½.
70 Don Pedro, 11s.	15 Leadhills, £6½.	55 West Tankerville, 21s.
10 Devon Consols.	50 Marke Valley, 23s. 9d.	3 West Chiverton, £15.
20 East Caradon, 9s. (call paid).	40 North Laxey.	10 Wheal Crebor, 38s.
80 East Van, £5½.	20 New Quebrada, 41s.	25 Wheal Grenville. 33s 6
	50 Parys Mount., 11s. 6d.	

WILLIAM HENRY BUMPUS, SWORN BROKER.
Offices: 44, Threadneedle Street, London, E.C.

Business transacted in Stock Exchange Securities and Miscellaneous shares of every description. Fortnightly accounts opened. References given and required when necessary. A Stock and Share List forwarded free on application.

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Full particulars of this valuable property, with copy of Report on same by Capt. R. Southey, of West Chiverton Mine, may be obtained on application to Mr. W. H. BUMPUS, who has Special Business in the Shares.

All who have money to invest should secure an interest in this company at once. The shares are certain to have a great rise.

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PURCHASERS of MINING SHARES should apply to Mr. COOKE, who can always supply at LOWEST PRICE NET.
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Established 1853.

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2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
[Established 1848.]

BUSINESS transacted in all kinds of STOCK EXCHANGE SECURITIES also in every description of BRITISH and FOREIGN MINING, COLLIERY MANUFACTURING, and other SHARES.

SPECIAL BUSINESS in the following:—

Aberdaunant, 12s. 6d.	Gorsedd & Merll., £4¼.	Pandora, 21s.
Assheton, 23s. 9d.	Hultafall.	Parys Mountain, 10s.
Bodidris, 21s.	Leadhills, £6.	Rookhope, 21s.
Chapel House, £2⅝.	Ladywell, 18s. 9d.	Roman Grav., £9¼.
Combmartin, 6s. 9d.	Llanrwst, £2½.	So. Roman Gravels, 11s.
Devon Consols, £4¼.	Monydd Gorddu.	Tankerville, £7⅛.
East Van, £5½.	North Laxey, 18s. 6d.	Thorp's Gawber.
Grogwinion.	Plynlimmon, 6s.	Van Consols, 9s.
Great Laxey, £20¾.	Pateley Bridge, 38s.	West Tankerville, 21s.
Glenroy, 20s.	Pennerley, 4s.	Wheal Grenville, £1¼.
Glyn, 8s. 9d.	Penstruthal, 6s.	Wheal Newton.
Condes of Chili.	Frontino, £3.	Port Phillip, 9s. 6d.
Chicago, 43s.	I.X.L., 6s.	Richmond, £6½.
Chontales, 7s. 6d.	Javali, 8s.	San Pedro, £5⅝.
Don Pedro, 10s. 6d.	Last Chance, 15s. 9d.	South Aurora, 4s. 6d.
Eberhardt, £6 6s. 3d.	Malpaso, 10s.	Tecoma, 17s. 6d.
Exchequer, 5s. 9d.	Malabar, 5s.	United Mexican, 35s.
Flagstaff, £3 3s. 9d.	N. Zealand Kap., 47s 6d	Yorke Peninsula, 5s. 9d

JAMES STOCKER, SWORN BROKER.

Consols, Foreign Bonds, Railways, Bank, Telegraph, Gas, and all miscellaneous Shares bought and sold, and fortnightly accounts opened for same. Shares sold for forward delivery on receipt of cover. List of prices and every information forwarded on application. References given and required when necessary.

BANKERS: LONDON AND WESTMINSTER.

MR. T. E. W. THOMAS, SHARE BROKER,
3, GREAT WINCHESTER STREET BUILDINGS, E.C.
Established 1857.

The following are the latest prices at which business could be done. Where the difference between the buying and selling price is wide transactions may be effected at an intermediate price:—

	Buyers.	Sellers.		Buyers.	Sellers.
Argentine	£ 4	£ 4¼	North Laxey	16s.	18s.
Assheton	¾	1	New Quebrada	£ 1½	£ 2
Bodidris	1	1¼	New Zealand Kapanga.	2	2¼
Derwent	2	2½	Parys Mountain	8s.	9s.
Devon Great Consols	4¼	4½	Pateley Bridge	2⅛	2⅜
Dolcoath	26	28	Penstruthal	3s. 6d.	5s.
Don Pedro	8s.	10s.	Richmond	6⅜	6⅝
Eberhardt	6	6¼	Roman Gravels	8¾	9¼
East Caradon	7s.	9s.	Rookhope	19s.	21s.
East Van	5⅜	5⅝	San Pedro	⅛	¾
Exchequer Gold	6s.	8s.	St. Patrick	1	1¼
Flagstaff	3	3¼	South Condurrow	7⅛	8
Glenroy	¾	1	Tankerville	6⅞	7⅛
Great Laxey (ex div.)	20½	21	Tincroft	12	14
Javali	7s.	9s.	Van	33	34
Last Chance	12s. 6d	15s.	West Assheton	⅝	⅞
Ladywell	1	1¼	West Chiverton	14	16
Llanrwst	2	2½	West Pateley Bridge	1	1¼
Leadhills	5¾	6	West Tankerville	⅞	1
Marke Valley	1	1¼	W. Grenville (call pd.)	1½	1⅝
Minera	19	21			

N.B.—A private telegram received to day reports an important discovery in the St. Patrick Lead Mine, in North Wales.

MESSRS. GREGORY, WHITAKER, AND CO.,
STOCK AND SHARE DEALERS,
81, BISHOPSGATE STREET WITHIN, LONDON,
Beg to notify to their clients and investors generally that Shares offered in the LLANRWST LEAD MINE at low prices, through the medium of this Journal, are rarely, if ever, delivered to the Buyer. To ensure the delivery of Shares bought, purchasers are cautioned to pay cash only on the delivery of transfers, accompanied by the holders' certificates.

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Bankers: The Alliance Bank (Limited).

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29, BISHOPSGATE STREET, LONDON, E.C. (Established 20 Years), can sell the following SHARES, at prices annexed:—

15 Alltami, £5.	10 Fortuna, £5 12s. 9d.	100 Pestarena, 3s. 9d.
60 Aberdaunant.	25 Gorsedd & Merllyn.	100 Parys Mount., 10s.
75 Almada, 4s. 6d.	100 Glyn, 8s.	100 Port Phillip, 9s. 6d.
50 Bodidris, £1 2s. 6d.	200 Great W. Van, 3s.	70 Rookhope, 21s. 3d.
30 Colorado, £1¾.	20 Great Dyliffe, £3¼.	10 Roman Grav., £9 6s 3
20 Chicago, £2½.	20 Hultafall, £5½.	10 Richmond, £6½.
25 Cakemore, £2½.	30 Last Chance, 16s.	20 St. Harmon, £2¼.
40 Combmartin, 6s.	5 Llanidlos, 32s. 6d.	10 So. Tolcarne (offer w.)
25 Chontales, 8s. 3d.	40 Llanrwst.	10 Tankerville, £7 8s. 9d.
15 Derwent, £2¼.	10 Leadhills, £6 1s. 3d.	30 Tolima.
25 Devonport and Tiverton Brewery, £4⅞.	20 Nth. Laxey, 24s. 6d.	100 Van Consols, 7s. 6d.
	70 Malabar, 5s. 3d.	10 W. Craven Moor, £10⅛
20 East Caradon, 9s. 6d.	50 Malpaso, 9s. 9d.	10 W. Tankerville, 20s
10 Eberhardt, £6¼.	60 North Laxey, 19s.	20 W. Wye Val., £3¼.
50 Exchequer, 6s.	15 Pennant, £5.	15 West Goginan, 10s.
50 Frontino, £2½.	40 Pennerley, 4s. 6d.	100 Yorke Peninsula 4s. 6.
30 Flagstaff, £3 3s.	80 Penstruthal, 6s. 3d.	

Shares bought and sold at net prices. Telegrams promptly attended to.

MR. CHARLES THOMAS,
MINING AGENT, STOCK AND SHARE DEALER,
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For reliable and trustworthy information concerning safe paying and progressive investments, read the "Investment Circular and Financial Record" for July, now ready, gratis and post free.
Special business on hand in Aberdaunant, Assheton, Bodidris, Combellack, Devon Great Consols, East Van, Great Laxey, Llanrwst, Leadhills, Penstruthal, Roman Gravels, Rookhope, Thorp's Gawber Colliery, Tankerville, Van, and West Chiverton.

MR. E. J. BARTLETT, STOCK AND SHARE DEALER,
No. 30, GREAT ST. HELEN'S, LONDON, E.C., has SPECIAL BUSINESS in the following:—175 Bodidris, 20 East Van, 50 Gorsedd and Merllyn, 20 Great Laxey, 500 Parys Mountain, 75 Penstruthal, 15 Richmond, 25 South Condurrow, 100 West Godolphin, 10 West Craven Moor, and 55 Wheal Grenville.

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The proximity of Mr. Beard's offices to the Stock Exchange enables him to transact business in Consols, Foreign Stocks, Rails, and other Securities promptly, and the prices of any Stocks or Shares will be forwarded by wire, if desired.
References exchanged.

MESSRS. W. J. TALLENTIRE AND CO.
STOCK BROKERS, AND DEALERS IN BANK, TRAMWAY, MINING, AND MISCELLANEOUS SHARES,
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Transact business in Stock Exchange Securities and Mining Shares of every description, either for immediate cash or the usual bi-monthly settlements, and also afford advice personally or by letter to executors, trustees, capitalists, and investors of every class in the selection of Securities for safe and profitable investment, their experience of the markets, extending over a period of more than 17 years, together with special facilities for acquiring information, enabling them to act beneficially for clients.
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100	ABERDAUNANT	LEAD.	350	PERKIN'S BEACH	LEAD.
200	BODIDRIS	do	100	PANDORA	do
40	EAST CRAVEN MOOR	do	25	PENNANT	do
35	EAST VAN	do	100	PENNERLEY	do
500	ELGAR	do	100	ROOKHOPE	do
200	GLENROY	do	25	ROMAN GRAVELS	do
30	GLYN	do	50	RED ROCK	do
50	GREAT DYLIFFE	do	15	ST. HARMON	do
10	GREAT LAXEY	do	50	SOUTH CONDURROW	TIN.
100	GREAT WEST VAN	do	100	TALYBONT	LEAD.
40	GROGWINION	do	25	TANKERVILLE	do
30	LEADHILLS	do	5	VAN	do
150	LLANRWST	do	60	VAN CONSOLS	do
50	MONYDD GORDDU	do	50	WEST TANKERVILLE	do
35	MARKE VALLEY	COPPER.	30	WEST WYE VALLEY	do
200	MEDLYN MOOR	TIN.	5	WEST GOGINAN	do
200	NORTH LAXEY	LEAD.	20	WHEAL GRENVILLE	do
100	PARYS MOUNTAIN	COPPER.	20	WEST CRAVEN MOOR	do
200	PENSTRUTHAL	TIN.	20	WEST CHIVERTON	do
100	PATELEY BRIDGE	LEAD.			

N.B.—Some of the above will be sold on specially favourable terms to cash purchasers.

HULTAFALL MINING COMPANY (Limited).—Special Business in these shares. Particulars, with copy of report of Capt. Richard Southey, of West Chiverton Mine, sent on application to W. J. TALLENTIRE and Co., 20, Change alley, Cornhill, London, E.C.

MESSRS. ENDEAN AND CO., STOCK AND SHARE DEALERS, 85, GRACECHURCH STREET, LONDON, E.C.

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Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. XXXIV.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,

Certificated Mining Engineer.

(Formerly Student at the Royal Bergakademie, Clausthal).

[The Author reserves the right of reproduction.]

SECTION II.

PROSPECTING FOR MINERALS—BORING.

III.—THE BORING OPERATION.

ROTATORY BORING.—Although in most cases the percussive system of boring is used, still in places where very soft clayey or marly strata, or a loose bed of a sandy or alluvial nature, is met with it may happen that the system of rotatory boring presents many advantages in boring through ground of such an exceptional nature. As we have mentioned, many arrangements and details are common to all systems of boring, we shall, therefore, occupy ourselves in the following with those particulars which belong specially to this method of boring.

The boring apparatus used in rotatory boring consists, as in percussive boring, of an upper, middle, and lower portion.

The upper piece consists of a swivel, as in the case of percussive boring, but as the boring is carried on without the use of a lever, there is no necessity for the use of a lengthening screw, so that in this case the swivel is attached directly to the topmost of the boring rods. It will also be evident that the connection between the swivel and the uppermost rod must be the same as between rod and rod, since each rod in its turn forms the uppermost rod. Instead of the swivel the ox-foot, which we have previously described, is often used for attaching to the uppermost of the shaft rods. Another essential part of the upper piece in a rotatory boring apparatus is the boring brace. In most cases the boring brace does not differ from the ordinary hand brace we have previously described, except in being of much larger dimensions, the arms being at least from 3 ft. to 4 ft. long, and the opening large enough to be screwed or clamped on to the rods. When the bore hole is so large, or the strata so stiff or hard as to require considerable force, bore levers (of which there may be three or four) are used in the place of the ordinary boring brace. As an example, where considerable force is required, we will describe an arrangement for four wooden boring levers, or arms. The levers are about 4½ in. broad and 4 in. deep, and are attached to a neck, which rests on the topmost joint. The neck, or collar, has a hole through it, of the same size and section as the rods, and has four vertical straps attached to it. The opening enclosed between one of the faces of the neck and the three sides of the strap is made to fit the section of the boring levers—4½ in. broad and 4 in. deep. The straps are made from 1½ in. by ⅜ in. iron rod, the neck itself, which is 6 in deep, is forged of ⅜ in iron. The wooden arms can thus be readily inserted in the straps, or taken out again, and the neck or collar removed from the rods. Instead of such levers the ordinary long keys for the rods, which we have previously described, may be used.

The middle piece, or shaft, consists usually of square iron rods. Being subjected to a considerable torsional strain, however, they are made stronger than in the case of percussive boring, generally from 1½ to 2½ in. square in section. The separate rods are generally the same length as in percussive boring; as, however, it is often necessary that they may be rotated in one or the opposite direction indifferently, the ordinary screw joints, so general in percussive boring, is here inapplicable. The joints formerly most used can be classed as wedge or cotter joints, socket joints, fork joints, and blade joints. The wedge or cotter joint has both halves exactly alike, the lower joint being the same as the upper, only inverted. We will, therefore, attempt to describe the upper half, which is formed at the lower end of the upper rod. About 18 in. above the extreme lower end the rod swells out gradually for about 6 in. long, being about 2 in. square; here, however, it is suddenly reduced to half its thickness, being 2 in. by 1 in. in section. The projecting part ends in a V-shaped recess, in which the V-shaped upper end of the other half of the joint fits. About 2 in. lower down is a rectangular slot, in which a rectangular projecting cotter, or wedge (attached near the upper end of the other half of the joint), fits. At a short distance above the lower end a similar cotter is attached, which fits into a corresponding slot in the other half of the joint. The two halves of the joint are either bolted together, or have a strap passed over them, which holds them tightly together. Immediately above and below the joint a swelling is forged on the rods, which has a hole bored through it, through which a long round iron bar can be passed, so as to suspend the rods. The fork joint of Dégoussée consists of two distinct halves. The lower end of the upper rod, which forms the upper part of the joint, is enlarged, and forms a fork. Between the two projecting ends the tapering end of the lower half is inserted, and the whole bolted together. The extreme end of the lower portion and the extreme ends of the two projecting sides of the fork are formed V-shaped, the other portions of the joint being made to fit.

The socket joint resembles an ordinary screw joint, only that the pin (which is inserted in the corresponding hole, or socket, which is formed on the lower end of the upper rod) is square in section, and tapers gradually towards the end. Two pair of bolt holes are drilled through the pin and socket at right angles to each other.

The blade joint consists in forming the two ends into broad thick plates, or blades, which are bolted together; the extreme ends are tapered on the outside down to a point, and fit into corresponding recesses filed at the root of the blade, where it is welded to the enlargement, or swelling, on the end of the rod.

These joints are all expensive, and, except for rotatory boring, are decidedly impractical arrangements, and extremely liable to work loose when used for percussive boring. The best of these is Dégoussée's fork joint, but the ordinary screw joint we have described as used for percussive boring, provided with a muff or strap, so as to allow of the rods being turned indifferently in the one direction or the other, is a much better arrangement.

The lower piece consists of the borer proper, which is attached directly to the shaft rods. Of these there are several descriptions. The valve borer consists of a long hollow cylinder, formed of sheet-iron, and rivetted at its upper end to a fork, by which it can be attached to the upper rods. The lower end is sharpened to form a cutting edge, and inside immediately above the cutting edge is an ordinary flap valve. Its construction is thus evidently the same as an ordinary slugger, with the lower end formed into a cutting edge. It can thus, and is only intended to be, used in loose or sandy strata. By repeatedly allowing it to rise and fall the loose matter is forced into the cylinder above the valve. When the cylinder is full it is drawn to the surface to be emptied. If the mass is slightly cohesive it will be found advantageous to attach a spade-shaped cutter at the lower end, which when the borer is rotated will penetrate and loosen the mass, so that it can more readily pass through the valve at the bottom. Sometimes in boring through dry gravel the valve borer is used, with the addition of a spiral cutter at its lower end, to loosen the gravel.

Of the spiral borers there are several descriptions. They are sometimes called clay borers, on account of being used chiefly for boring through clay or similar cohesive ground. The form is very various, on the one hand resembling an ordinary screw or spiral blade, cylindrical in general form; and, on the other hand, resembling an ordinary shell. The hollow borer consists of a hollow cylinder, with a long vertical slit, the lower end of one side terminating in a nearly horizontal cutter. These borers are sometimes called bottom borers, on account of the cutting portion forming a sort of bottom to the cylinder, and are used for boring in marls, clay, marly sand, gypsum, mild clay slate, &c. The bottom or cutting edge often forms a portion of an archimedian screw, with a very slow pitch. The chief variation in this class of borers is in the cutting edge. When the borer is used in chalk, or clay slate, and the like, the cylinder is made of bar-iron, and the vertical slit much narrower than in other cases.

The sack borer consists, as its name indicates, of a sack of leather ticking, or the like material, which is attached to a bent bar or hoop of iron, which latter is fastened at both ends to a strong heavy pointed bar. The one end of the hoop is attached considerably higher up (about 2 ft.) on the bar than the other, and the bar itself is attached to or forms the last of the shaft rods. The sack borer is used almost exclusively in quick strata, especially when lowering a heavy lining for a well, or even a shaft.

The operation of rotatory boring, although extremely simple, is one requiring no little care if the bore hole has to be carried any depth, and is to be kept vertical, which cannot always be accomplished by guides. The borer, after being placed in a vertical position is rotated, and if necessary weighted. The rate of progress will depend partly on the weight of the borer, but should never be carried above a few feet in advance of the lining. During the boring the rods are attached to the winding rope, so that in case of a sticking fast the attempt may be made at once to loosen the borer by raising it with the rope. Whenever the borer is brought to the surface the boremaster should carefully examine the borer, and observe whether it was brought up full to the surface, and any indication as to the manner in which the borer is working, as it is chiefly from such indications that he must gather what is the most suitable description of borer to use, and when it may be first advisable to resort to the percussive system of boring. In consequence of the great torsion exerted when the rods are very long, the method of rotatory boring cannot be used for very great depths; and its use is, as we have shown, chiefly for exceptional purposes, as the search for brown coal, clay beds, and other strata, covered only by a thin and mild alluvium, and for examining the foundations for buildings, &c.

HYDRAULIC BORING.—The first apparatus, perhaps, which was designed to be used partly as an hydraulic borer is that of Fauvelle, which was introduced about the year 1846. The essential peculiarity of this invention was the forming of the shaft rods by means of gas piping, or the like, through which a constant stream of water was forced downwards, and rising in the bore hole on the outside of the piping, it carried upwards with it the slime and debris formed by the cutting tool at the bottom of the bore hole; the chief object being to save the time otherwise spent in screwing and unscrewing the rods when it was necessary to commence sludging. Besides this, the additional advantage was obtained that the fall of the cutter took place in a perfectly clean hole, and the full effect of the blow was thus obtained during the whole of the boring operation. The method of boring was indifferent, Fauvelle having applied the system both with percussive and rotatory apparatus. In the latter case the arrangement was precisely similar to that which we have previously mentioned as used by Von Eicken at Sterkrade, near Oberhausen.

The great saving of time by this method was at once evident on its first trials, Fauvelle having carried a bore hole to a depth of 540 ft. within 23 days, including all accessory work. It was at first objected to this system, that in case the bore hole had already passed through strata quick with water the slime and debris at the bottom of the bore hole might not be raised, and collecting in considerable quantity might wedge fast the rods in the bore hole. The fact that a continuous rise of the water (and with it of the slime) took place when the water was forced into the bore hole by means of a force pump was fully established. Chanoit and Catelineau, however, made a series of experiments on the carrying power of water in a vertical direction, and as the results of their observation devised a boring pump. Among the results of their experiments they found that fine sand was carried away with a stream of ·10 meter (4 in.) per second velocity, coarse sand with a stream of 8 in. per second velocity, sand grains 2 centimeters across with a stream of 18 in. per second velocity, broken pieces of flint when the stream had a velocity of 3 ft. per second, and even particles of iron and copper were carried along with the stream if the velocity rose to 6 ft. per second.

Chaniot and Catelineau's apparatus consists of four parts. The upper end of the apparatus consists of a sheet tube, which is surrounded by a cast-iron cylinder. An annular piston is attached to the sheet-iron tube fitting the cast-iron cylinder. The piston has several valves in and opening towards the under side; the tube is also provided with a short spout.

To the lower end of the sheet-iron cylinder a short sheet-iron tube of the same diameter is attached, and to and by means of which the hollow wood rods (made from staves of pine wood and fastened with iron hoops) are attached. The tubes are about 30 ft. long, and connected by bayonet points. The free falling apparatus, somewhat similar to Kind's (the gripping apparatus being opened and shut by means of a cap or valve), being enclosed in the hollow rods. The borer proper consists of a heavy block, which is attached to a sheet-iron tube, the cutters being attached to the underside of the block. The end of the balance-beam is attached to the upper end of the sheet-iron tube. When the apparatus has been raised to its highest position and commences to descend the valves on the underside of the piston close, so that the piston exerts a pressure on the water in the bore hole, which at the bottom of the bore hole can gain admission into the tubes, in which it rises with a velocity dependent on the pressure exerted by the piston on the water. This ascending stream of water inside the tubes comes in contact with the underside of the cap of the gripping apparatus, thus releasing the borer, which falls freely to the bottom of the bore hole. The ascending column of water finds a free outlet at the top of the tube. When the rods begin to ascend the pressure of the water on the outside of the tubes and beneath the cap of the free falling piece ceases, but the weight of the column of water above the cap still acts and closes the gripping apparatus, so that the borer is thus raised with it, the water above the cap being at the same time raised and overflows at the top. The action of the apparatus it will be observed is essentially that of a double-acting pump, by which a continuous stream of water is obtained both during the rise and fall, combined with Kind's ordinary free falling apparatus. It will also be evident that many of the free falling apparatus we have described could equally well be used. This instrument is not liable to wedge fast on account of the slime and debris collecting about it, as the stream of water and slime continually ascends inside the tubes.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergrath, Dr. VON GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz, North Germany.

THE COAL SUPPLY OF THE PACIFIC STATES.

An adequate supply of mineral fuel at a reasonable price is so essential to the permanent prosperity of a country or district that too much importance can scarcely be attached to anything calculated to encourage the discovery of new coal fields, or facilitate the development of those already known to exist. The systematic working of the coal deposits of California, Oregon, Washington, and, indeed, of all the States and Territories in the western portion of the Union, which are fortunate enough to possess them, will prove of as great importance as the development of their metalliferous deposits, and the interesting little volume by Mr. GOODYEAR* enables a good idea to be formed of what has been and what can be done. The coal fields of the Western Coast of North America are limited in extent, and of comparatively recent geological formation. It appears that none are earlier than the Cretaceous period. They mostly furnish a non-caking bituminous coal, which belongs to the class of lignites or brown coals. Vancouvers Island, however, produces caking coal, and some caking coal of good quality has also been found in Washington Territory. Small quantities of anthracite have been found in Queen Charlotte's Island, and probably also in Washington Territory. But no workable mine of anthracite has ever been discovered on the coast, and the little that has been found has always proved on investigation to have been the result of local and special metamorphism. Washington Territory is by far the most liberally supplied with coal, Oregon comes next, and California last. In fact, California is decidedly unfortunate in the extent and the character of her coal fields.

The only field within the State of California where coal has hitherto been profitably worked is that of Mount Diablo, which is 10 or 12 miles along the outcrop of the beds. Only very little of it appears to have been yet explored. The strata have been considerably disturbed at numerous localities by faults of greater or less magnitude, and the coal beds themselves are subject within short distances to such great variations in thickness and quality of coal, as well as in the character of the rocks that enclose them, that it is not possible with present knowledge to recognise with certainty any given bed in the eastern portion of the field as being the same with any one of those which have been so extensively worked in the western portion. The Central or Stewart's Mine is scarcely within the productive limits, to judge from present experience, as, although the output has sometimes been 1000 tons per month, the production has probably been at a loss to the owners. The two principal mining villages are Nortonville and Somersville. The coal beds which have been profitably worked to a greater or less extent are three in number, and are known respectively as the Clark Vein (the highest stratigraphically), the Little Vein, and the Black Diamond Vein, the lowest. The beds lie nearly parallel to each other, all dipping to the north. All the valuable mining ground here for a distance of nearly 2½ miles is now owned and controlled by the Black Diamond Coal Company, the Union Coal Company, and the Pittsburgh Coal Company. There is a little fire-damp in all the beds of the Mount Diablo Mines, and there are now and then localities where it is necessary to watch pretty closely. But the quantity of this gas has never been great enough to necessitate the general use of the safety-lamp in the workings, and it has, therefore, only been used as a precautionary means for testing the presence of the gas in certain localities where it was known that small quantities of it were liable to exist. No coal-breaking machinery has ever been used or needed here; in fact, one serious trouble with this soft coal is that it crumbles too easily and makes too much slack without any other breaking than that which it natually gets in mining and handling. There has never been any general system of drainage for the mines, and the mines appear to have been opened on too independent a scale to be as economically worked as would have been practical.

The only coal mines hitherto worked with profit in Oregon are located at Coos Bay, on the Western Coast of the State, about 100 miles north of the California boundary, and some 40 miles north of Cape Blanco. The full extent of the Coos Bay coal field is not yet definitely known, and it will probably be many years before it will become so. The wild nature of the country, which is everywhere covered with dense and heavy forests, renders exploration extremely slow, laborious, and expensive, while the distance from market, combined with the difficulties of navigation, make it impossible to mine coal here with profit, except at a few points where it is found of good quality, favourably situated for cheap mining, and very close to navigable water. It is already known, however, that this coal field covers at least several hundred square miles of territory, stretching from the mouth of the Umpqua river on the north to points beyond the Coquille river on the south, and extending back from the coast to distances of from 15 to 20 miles inland. The mines are the Eastport Mine, which produces good quality coal, but it is not thick enough to pay for handling so large a quantity of rock as has to be moved in getting it, The Newport Mine, which has the same bed and character as the Eastport. There are very few faults or disturbances in the works already carried on; but there is evidence that within ½ mile or less to the west of the Newport Mine there is a disturbance of considerable magnitude. The New Mine on the left bank of Isthmus Slough bids fair to become of greater value hereafter than either the Eastport or the Newport; it has already been proven by a tunnel of 500 or 600 ft. on a coal bed in the direction of about north 18° east. There is another mine —the Henryville—but it appears to be worthless.

The coal mines of Washington Territory are at Bellingham Bay,

* "The Coal Mines of the Western Coast of the United States." By W. A. GOODYEAR, M.E. San Francisco: A. L. Bancroft and Co.

close to the British Columbia line, and in the vicinity of Leattle, on the eastern shore of Puget Sound. At Bellingham Bay there is but one mine, worked by a company of the same name, opened by a slope some 900 ft. in length, which goes down on the bed in a direction north 30° west, with a pitch of about 35°. The bed is about 14 ft. thick, but it contains so much interstratified slate and bone that all the coal has to be carefully sorted by hand before it is sent to market. Moreover, after several years experience in working the whole thickness of the bed, it was at last discovered that the lower half of it is so dirty that it is better economy to leave it in the mine than attempt to work it. Accordingly for the last few years only about 7 ft. in thickness of the upper part of the bed has been mined. There probably remains in this mine an available supply of coal, if no accident happens, for three or four years to come at its present rate of production. There is some fire-damp in this bed, and it requires constant watchfulness, though naked lights are generally used. The only other coal mines yet worked in the Territory to any noteworthy extent are those of the Seattle Coal Transportation Company, the Renton Coal Company, and the Talbot Coal Company. Both the Renton and the Talbot Mines have been opened within the last few years. The latter has driven a tunnel some 200 ft., and exposed a bed of coal some 6 ft. to 8 ft. thick, and reputed good quality coal rather soft is now being shipped to San Francisco, but whether at a profit or otherwise is unknown. There are two beds in the Renton Mine; the upper is about 17 ft. in thickness, but contains some interstratified bone, there being about 10 ft. of good coal in the bed. The lower bed is 13 ft. thick, the upper 7 or 8 ft. being nearly all good coal, and the lower 5 or 6 ft. so bony that it is worthless. The two beds are divided by 80 ft. of sandstone and shales, with one 5 ft. seam of impure coal. The Seattle Company's coal Mr. Goodyear describes as of great value for the San Francisco market. There is a 9 ft. lower seam of superior quality coal free from impurities, but divided by two 3-in. clay partings into 3 ft. 6 in., 3 ft., and 2 ft., thus furnishing 8½ ft. of good marketable coal. In the middle bed the quantity is uncertain. In the upper bed the lower 5 ft. is coal of nearly uniform quality except a single clay parting 3 in., and would be all mined. The lower one alone of these three beds will probably furnish a greater mass of good coal in a given length and breadth than any mine yet worked on the Pacific Coast of North America.

Throughout the book Mr. Goodyear gives such minute details as to the work done that the study of it cannot fail to be useful to everyone engaged in connection with the coal supply of the Pacific Coast, and will, moreover, form a valuable guide for those disposed to make further explorations with a view to discover other coal deposits which no doubt exist in the region treated of.

TECHNICAL EDUCATION IN CANADA.

Reference has several times been made to the constantly increasing efforts of the Board of Governors and professorial staff of King's College, Windsor, Nova Scotia, and the recent Enccenia, certainly afforded evidence that those efforts have not been without results. It is gratifying to find from the annual address of Canon Dart, the president, that the work and prospects of the college and the progress of the students have been eminently satisfactory, whilst the needs of the university in the shape of buildings, &c., each year become better supplied. It may, therefore, be hoped that in the future, as in the past, King's College will continue to enjoy its high reputation for turning out men fitted for leading positions in society. It has been truly said that every walk of life has been adorned by some King's College man since Edward Cunard attained a leading position in commerce, great wealth, and a baronetcy, whilst more than one of his co-alumni have reached a place on the episcopal bench, and the celebrated "Sam Slick" (Chief Justice Haliburton) certainly did no discredit to his college as a lawyer.

The recollection of "Sam Slick" (whom we once heard remark, as Chairman of the Vancouver Coal Company, on the occasion of a pending negociation between a high ecclesiastical functionary and the company he was connected with—"I'd have the terms very distinctly settled in writing, for in a business dealing it's difficult to say which is the worse to deal with, a lawyer or a bishop, so that no faith should be put in either") is especially revived by the circumstance that our esteemed correspondent, his son—Mr. R. G. Haliburton—received the degree of D.C.L. at the Enccenia now being noticed. The same degree was earned by the Rev. G. W. Hill; whilst many readers of the Journal will be glad to learn that the Bishop's prize was carried off by Mr. H. How, jun., B.A., the son of Prof. H. How, whose chemical and metallurgical communications we have often published. Looking down the Pass and Class list we also notice that Mr. V. E. Harris took B.A. *laud. prog.* S.T., and secured McCawley's Hebrew first prize, the second falling to Mr. W. J. Wilkinson, B.A. Mr. R. D. Bambric took the prize for Latin prose, and was *prox. accessit* for the English Essay; the General Williams' prize for modern languages was taken by Mr. W. C. Ambrose; and the Almon Welsford testimonial by Mr. F. W. Vroom. The prize for the English Essay was gained by R. Butler, and for the President's prize for English Rhymed Heroic Verse, which brought forward several creditable productions, Mr. F. H. Scott stood first, with Mr. T. Peters *prox acc.* In addition to these four students succeeded in passing their first B.E. examination—W. C. Ambrose, first class; J. G. Hind, second class; H. E. Arnold, third-class; and W. R. Butler, *aeq.*—which, considering the comparatively short time the technical courses have been in existence, and the population of the province, cannot but be regarded as highly encouraging.

The details of the technical course have already been published in the Journal, and their thoroughly practical and utilitarian character has been pointed out. The number of students attending them, as compared with the college, shows that they have not failed to be appreciated, and it can scarcely be doubted that when the mineral and industrial resources of the province come to be developed the engineering and science students of "Old Kings" will be able to secure the most honourable and remunerative positions, and at the same time to do more than many others to make Nova Scotian enterprise attractive to the capitalists of this country.

ECONOMIC TREATMENT OF NICKEL ORES.

For the extraction of sulphate of magnesium, and other secondary products as well as the nickel contained in the ore, an ingenious process has been proposed by Mr. A. H. ALLEN, of Sheffield. The ores best suited to the invention are those known as pimelite, genthite, rewdanskite, and garnierite, consisting chiefly of hydrated silicates of nickel and magnesium mixed with variable quantites of iron compounds, quartz, and chrome ore. As the invention has for one of its objects the production as secondary products of the different varieties of sulphate of magnesium, including that known as Epsom salts, the steps of his process are specially arranged to facilitate the production of sulphate of magnesium in a state of purity, and to increase the yield as much as possible. For this purpose he treats the finely ground ore with sulphuric acid or sulphuric acid and water, and applies heat to facilitate the composition, in some cases carrying the temperatures to dull redness; he then lixiviates the mass with water, and thus obtains a residue of silica and undecomposed ore, and a liquor containing the sulphates of nickel, iron, and magnesium, and occasionally of cobalt, cooper, and other metals. He then usually neutralises the solution of the ore, and separates the iron by cautiously treating the boiling liquid with magnesia, after taking care that the iron exists only in the condition of a ferric or persalt, and if necessary he brings it to this condition by the use of nitric acid, chlorine, or other convenient oxidising agent. The magnesia must be added in such quantity as to precipitate the iron without any considerable quantity of nickel. With the iron alumina, arsenic, acid, and other impurities become precipitated. Having separated the iron precipitate by filtration or other convenient means, he then throws down the nickel from the clear solution by any reagent which will cause its precipitation without throwing down magnesium compound at the same time, and of the many available reagents he prefers such as will facilitate rather than hinder the subsequent production of sulphate, or other heavy compounds of magnesium from the liquid separated from the nickel precipitate; as suitable precipitating agents he prefers the compounds of magnesium.

When he desires to obtain the nickel in the form of sulphide, he uses solutions containing sulphide, sulphydrate, polysulphide or hyposulphite of magnesium, or all of these bodies; or he adds sufficient magnesia to precipitate the oxides of nickel, and any other metals which may be present, and then passes sulphuretted hydrogen gas through the liquid. If he desires to obtain the nickel in the form of oxide he prefers to treat the liquid with magnesia or hydrate or carbonate of magnesium, or with hypochlorite of magnesium, or several or all of these bodies, or with substances or solutions containing them as principal constituents, but he does not limit himself to the employment of magnesium compounds for the above purpose. Of substances other than magnesium compounds he prefers to employ sulphide of barium, the sulphide of nickel obtained being separated from the co-precipitated sulphate of barium by re-solution in acid, and the nickel solution so obtained treated with chalk and lime in the usual way for obtaining oxide of nickel; sulphide of strontium may be substituted, sulphide of barium in the last process. Most of the compounds of calcium are not well suited for his purpose, and he makes no claim to their use for precipitating nickel from the solution of the ore. When the reagent employed has caused the precipitation of sulphide of nickel, he converts that substance into oxide by any of the known methods, and treats the resultant oxide, or that obtained by direct precipition, in the usual way for the production of metallic nickel. For most purposes any copper or cobalt which may be precipitated with the nickel will not affect the quality of the product, and its presence may be ignored, or it may be separated by any of the known methods. From the liquid separated from the nickel precipitate he obtains sulphate of magnesium by evaporation and crystallisation in the usual way, or he employs it for the production of other compounds of magnesium by double decomposition.

THE SULPHATISATION PROCESS.

Although in the Welsh mines the occurrence of the gold in connection with sulphurets so entirely baffled those engaged in the treatment of the mineral that the whole of the capital subscribed was expended without useful result, the miners of the Pacific States of America have long successfully used the chlorination process with which by the judicious application of common salt, manganese, and sulphuric acid, though all of them have to be purchased for the purpose, the gold has been extracted economically, and it seems that even this is now to be superseded by the sulphatisation process of Prof. Monnier, which, after having been satisfactorily tested with copper ores, has now been for some time at work upon gold ores at Messrs. Walrath and Hunter's Providence Mines, in Nevada County, California. The process consists essentially in converting the sulphurets into sulphates of the different metals, and subsequently separating them by a method which makes it almost an all-round process. The whole process has been carefully watched by a correspondent of the Mining and Scientific Press—Mr. J. W. A. Wright—and he gives a very favourable account of it. Messrs. Walrath and Hunter have hitherto during the six years they have worked the mine reduced the ore by the common method of chlorination. Their shaft is down something more than 800 feet, with the usual drifts every 100 feet. Some 20 men are now at work in the different drifts, and the ore brought up daily is a very fine quality of sulphurets. The chemical compounds it contains, besides the pure silica of the quartz, are sulphurets of silver, copper, iron, zinc, and lead, containing gold, also small quantities of arsenic and antimony.

The crude dry ore in lumps is, according to the Monnier process, mixed with sulphate of soda and passed by the shovelful into a stone-breaker, and thence between Cornish rollers. The proportion of the mixture is 20 lbs. of soda to 80 lbs. of ore. Through one elevator the crushed mixture passes to a wire sieve with 24 holes to the linear inch. From this sieve the coarser particles return by a shute to the rock-breaker; the finer pass through it into a second elevator, which conducts the finely pulverised and dry material into a large box, whence it is passed regularly through a small chamber of brick and iron into the huge revolving iron cylinder, which is 5 ft. in diameter by 40 feet long, and therein roasted. This cylinder is revolved very slowly by water-power. Its upper end, that at which the ore enters, is raised 6 in. above the level of the lower end. This elevation can be increased, according to the proportion of sulphur in the ore. The cylinder has now been revolving without intermission for a month. Its slow motion causes the roasting mixture to gravitate gradually towards the lowest level, and some 12 hours are required for the crushed sulphurets to pass from the upper to the lower end of this revolving cylinder. It thus contains at one time about 7½ tons of the ore, since about 15 tons are reduced by this method every 24 hours. An intensely heated draft of air passes steadily from the fire-box into the lower end of the cylinder. The mixture is thus heated to a high degree, until at the lower end the ore reaches a dark-red heat. This roasting within the cylinder gradually transforms the sulphurets into sulphates, and gold is set free. Chemically this is explained by the sulphur becoming oxidised and forming sulphuric acid, which combines with the soda, forming a bisulphate of soda, the decomposition of which reduces successfully the sulphurets of iron, &c. A considerable quantity of sulphurous acid is also formed and escapes from the cylinder. The resulting sulphates being soluble in water, you can look with safety from the upper end of the cylinder through its entire length, and see myriads of brilliant scintillations flying to and fro, and falling like so many meteors in miniature. These are caused by the union of sulphur with the oxygen from the atmospheric air. The degree of heat required is maintained by consuming in the fire-box half a cord of mountain cedar each 24 hours.

The red-hot ore is received at the lower end of the revolving cylinder into an iron wheelbarrow, and transferred to five lixiviation tanks partly filled with water at the natural temperature. The man who handles the wheelbarrow takes the roasted ore from it by the shovelful, and drops it into any one of the lixiviating tanks. Quite a detonation follows as each shovelful is thrown in. This is continued until each tank receives its allowance. By a set of rubber tubes, connection is kept up between the liquid in three of the tanks at a time, thus forming a battery. When the water in any of the five tanks holds in solution the largest possible amount of sulphates of silver, copper, and soda, it is sent by a tube into small tanks in the silver room filled with cement copper by which the silver is precipitated, thence the remaining liquid is run into a reservoir. Any weaker solution is passed into another receptacle, to be used again in lixiviating till it attains sufficient strength. The solution from which silver has been precipitated is conducted by a wooden pump and trough into the lower of two tanks near the lower end of the revolving cylinder. Thence it is raised by a wooden pump into the upper tank which is connected by a trough with, and serves as a feeder for, a huge evaporator, the liquid in which is kept at boiling heat by the hot air passed into it from the revolving cylinder and the fire-box. After a certain time allowed for evoporation, the remaining liquid is passed by rubber syphons from the evaporator into the crystallising tank. This tank now contains only sulphates of copper and soda in solution. As the liquid cools, the sulphate of soda crystallises and is drawn out by an iron hoe with a long iron handle into a pile, to be used over again to repeat the process *ad infinitum*. The amount lost is scarcely appreciable. The copper in solution is then precipitated by iron. All the round tanks are about the same size, having a capacity of some 700 cubic feet. The five used for lixiviating each hold 25 tons of ore, besides the water needed to dissolve the sulphates of silver, copper, and soda.

The insoluble matter left in the lixiviating tank consists of silica, pure gold, and sesquioxide of iron, also a small amount of silver, with sulphate of lead. When the liquid has been drained from it, it is shoveled out on a platform, from which is passed into the arastras. After mixing with water and thorough grinding it runs into feeders—which act also as reducers of the remaining sulphate of silver—and thence through wooden spigots and troughs into broad, shallow, and long troughs, provided from point to point with boxes or catchers of peculiar construction. The bottoms of these troughs and boxes are covered with amalgamated copper plates. Here the gold is so free it is immediately taken up by the quicksilver, and with the remaining silver is secured in the form of an amalga while the residuum, containing oxide of iron, passes outside of the building to a large wooden tank. From that the oxide is collected in a still larger tank, where it settles and is collected and dried. Mixed with oil this oxide of iron makes the purest of metallic paints—its natural colour reddish brown—and is the very best that can be used on all iron structures. By combining different ingredients with it various colours can be produced. It makes a first-class fireproof roof paint.

SQUEEZING AND WORKING METAL BLOOMS.

The machine invented by Mr. P. G. WESTMACOTT, of Elswick, is provided with a perforated table or grating, on to which the bloom or mass of metal to be treated is placed by means of an hydraulic pusher or other suitable contrivance. At one end of the table there is a powerful hydraulic ram, and at the other end a firm abutment supporting an anvil block. The bloom or mass of metal to be worked is compressed between the tup or head of the ram and the anvil block, during which operation the scoria is free to escape, and it falls through the openings or perforations in the table. For the purpose of turning the mass of metal to admit of its being compressed on all sides he provides a hinged flap or trap-door in the table immediately in front of the anvil. Whilst the compressed mass of metal is supported upon the table the trap is caused by means of hydraulic or other gear to incline to any desired angle. The bloom moves with the flap, and when the ram again advances it catches the bloom in the position to which it has been inclined, and subjects it again to pressure; the operation is repeated again and again as often as may be desired. The scoria finds a free outlet by the flap opening, whilst the bloom is held between the tup and the anvil the flap is opened to let the scoria drop.

For the purpose also of turning the bloom end for end, or in the plane of the table, he provides a fork or such like instrument, which by mechanism, by preference hydraulic mechanism, can be made to take hold of the bloom, and which can then be made to turn round taking the bloom round with it. The fork and the apparatus connected therewith is mounted on a carriage above the table, and the cariage can travel to and from the anvil so that it commands the whole length of the table. In addition to the main hydraulic cylinder for actuating the ram he provides a second smaller cylinder for moving it when the heavy pressure is not required, and at this time a valve is opened by which water is allowed to flow freely to and fro between the main hydraulic cylinder and a tank. One lever handle serves to admit water from the accumulator to the smaller cylinder, and when it is moved further it also admits it to the larger cylinder, having first caused the valve in connection with the tank to be closed. The movement of the handle in the other direction allows the water to escape from both cylinders, and admits water under pressure to the other side of the piston in the small cylinder to draw back the ram.

In some cases he interposes moveable blocks between the tup or head of the ram and the metal to be compressed; the faces of such blocks may be of any desired form. He moves these blocks when they are required into their places by means of hydraulic or other gear, which serves also to remove them again when they are no longer required. In some cases he provides the table with two lateral abutments to limit the spreading of the metal when exposed to pressure. In place of using a large and a small pressure cylinder a single cylinder may be employed, and in connection with it two accumulators or supplies of water under pressure, the pressure of one supply being much lighter than that of the other. When the bloom or mass of metal has been thoroughly worked in the machine it is pushed away from the table by the hydraulic pusher on to a trolly to be conveyed away.

COMPRESSING METALLIC SHEETS.—The essential feature of the improved machinery for making sheets of single metals or compounds, or of two or more metals or compounds combined in layers, invented by Mr. W. MCARTHUR, of Johnstone, Renfrew, is a kind of lever compresser which, formed with a curved acting face and centered on journals, is by an oscillating motion made to compress the metal between its face and an opposing fixed or moving face. The metal operated on may be in a cold, or heated, or semi-molten condition, according to its nature or other circumstances, and it may be fed towards and past the lever compresser or compressers by hand or by rollers or other feeding mechanism, or in some cases by the action of the compressing apparatus. In some cases the metal may be acted upon in succession by a series of lever compressers arranged to gradually reduce it to the desired thinness. The compressing faces may be grooved or partly grooved or indented, the better to take hold of the metal, or for producing indentations or projections on the metal. The necessary oscillating motion may be imparted to the lever compressers in various ways, but in a preferred arrangement the outer end of the lever arm or arms is or are connected by toggle links to a fixed centre, and the middle joint of the toggle links is connected to a lever acted on by a revolving crank or eccentric, arranged to impart a slow and powerful compressing movement and a quick return movement. The opposing face mentioned may be a second lever compresser, shaped and acting like and in concert with the one first mentioned.

IMPROVED AIR-ENGINE.—Although the air-engines of Ericsson, Schwarzkopf, Roper, and others have been much used, and where carefully managed have given satisfaction, they have not come generally into favour, from various causes. One of the objects and one of the essential features of the invention of Mr. H. W. COOK, of Stondon Massey, Essex, is the use of gases produced by, and remaining over from, the combustion of fuel, either alone or combined with a supplementary supply of air. The fuel is placed in a strong closed chamber supplied with compressed air, and into this chamber air is further forced by means of a pump or other suitable device. Means are provided, either by valves or otherwise, whereby any given proportion of air may be made to pass through the fuel, so that the amount of combustion and mean temperature of air may be varied at will. If now the heated air be made to work a piston of the same stroke as the air-pump, and if the air be used expansively so that its mean pressure shall be equal to that in the air-pump, its area must be larger than that of the pump in proportion to the increase of volume produced by the heat, and this increased area (which represents the total effect of the heat) represents also the effective power of the engine after working the air-pump. The whole of the heat is thus utilised, whereas in ordinary steam engines about 30 per cent. escapes up the chimney, and 60 per cent. is wasted in evaporating the water.

CRUSHING AND PULVERISING MINERALS.—In constructing machinery according to the invention of Mr. H. SUNDERLAND, of Handsworth, a strong crushing block is mounted upon a horizontal axis, so that it is capable of an oscillatory motion, the said horizontal axis being situated a short distance from the lower end of the block. The said oscillating block has an oblong or rectangular figure, and its opposite longer sides constitute two crushing surfaces. The said block is made by preference hollow, and either of cast-iron, or chilled cast-iron, or of steel. The lower half of the oscillating block is situated and works between two strong uprights forming the fixed crushing blocks of the machine. The upper halves of the inner sides of these fixed crushing blocks are inclined from their tops downwards, the said inclined parts constituting the acting crushing surfaces of the fixed blocks. Two pairs of crushing surfaces are thus provided, one of the fixed blocks and one side of the oscillating block forming one pair of crushing surfaces, and the other side of the oscillating block and the other fixed block forming the other pair of crushing surfaces. When the oscillating block is vertical, or at the middle of its stroke, a wedge-shaped space is situated between each side of the oscillating block and the fixed block facing it, and into these spaces the ore, mineral, or substance to be crushed and pulverised falls, the ore, mineral, or substance being fed to the said spaces in any convenient way. As the oscillating block in its motion inclines to the right hand or left hand it

crushes and pulverises the ore or mineral between itself and the fixed block or surface; a double action is thereby obtained, the oscillating block operating by its motion in either direction. The oscillatory motion may be given to the block by a cam or crank on a horizontal shaft acting upon it near its upper end.

IMPROVED ROCK DRILLS.

According to the invention of Mr. JAMES MAWSON, of Eldon, the drill or boring tool is carried by a rod or bar, having a screw thread formed on the outside thereof, and which rod or bar works in and is supported by a metal cylinder, which is cast in two separate parts, and connected by a hinge. Within this metal cylinder a tube of iron or other suitable metal is placed, and secured by means of a set screw or screws, which passes or pass through the sides of the metal cylinder, and which tube is provided on its interior surface with a thread corresponding to that on the drill rod or bar. The tapped tube is provided with an enlarged head to prevent its passing too far into the metal cylinder. Upon the fore end of the metal cylinder a hoop or ring or flange is placed, the latter being provided with two lugs or projections which carry two metal bolts or pins, and upon the rear end of the cylinder another hoop or ring or flange having two lugs or projections thereon is placed. Through these last-mentioned lugs or projections two screw pins work for the purpose hereinafter described. Upon the rear end of the cylinder a cap or terminal cover, having a pointed or suitably shaped end, is screwed or otherwise attached.

When it is desired to drill a hole in coal or other substance the drill rod or bar is screwed into the cylinder to its fullest extent, and the machine is then brought into position, the end of the cap on the cylinder being brought to bear against the sides of the drift or other suitable surface, and the two screw pins screwed against the same surface to prevent the cylinder from moving. Supports may also be placed against the two pins carried by the lugs or projections on the fore end of the cylinder for the same purpose. When the machine is so fixed in position a rotary and forward motion is given to the drill rod or bar by means of a ratchet brace or braces fixed thereon for that purpose; and when the drill rod or bar has been screwed out of the cylinder to nearly its entire length, and it is still desired to continue the drilling, the cylinder is turned by means of the pins on the forward hoop or ring, or flange, until the drill rod or bar, which is held stationary, is screwed up as before. Should the screw thread in the internal tube of the cylinder become worn out the tube can be removed from the cylinder, and another tube substituted therefor.

REDUCING METALLIC ORES.

Some few years since a process for reducing spongy iron from iron ore was invented by Mr. T. S. BLAIR, of Pittsburg, Pennsylvania, and he has now ascertained that some further improvements can be effected in conducting the process and in the apparatus for carrying it out. For the sake of simplicity, the subjoined description is confined to the method and apparatus for the reduction of iron ore and the production of iron in spongy condition. The apparatus consists of a vertical retort or reducing furnace combined with a gas producer, and with circulating pipes for the gas fitted with suitable valves. The producer may be of any known construction, but he prefers to make it as a chamber closed at the bottom, provided at the top with a fuel hopper and shoot that can be closed by a valve so as to prevent access of air. On one side close up to the roof of the chamber is an inlet aperture, and opposite to it on the other side is an outlet aperture. On the two other sides of the chamber are formed vertical recesses, or projecting ribs, which prevent the passage of air from the one side to the other except through the body of fuel with which the producer is charged. The outlet aperture communicates by a passage with the interior of the vertical retort or reducing furnace at a point just under an overhanging shoulder formed in the retort by constructing it of larger diameter below than it is above the said shoulder. At the top of the retort is a feed hopper by which the materials to be operated on are introduced, the feeding aperture being provided with a valve to prevent access of air. At the bottom of the retort is a moveable slide or platform containing vessels which can be successively brought under the discharging mouth of the retort so as to receive a portion of its contents without exposing them to the air. From the top of the retort a pipe leads down to one side of the producer, where it is provided with a valve by which it can be made to communicate with either the inlet or the outlet aperture of the producer. An air passage is also provided at the inlet side of the producer provided with a valve for regulating the supply of air. In the pipe leading from the top of the retort is arranged a fanner or other suitable apparatus for creating a current, and for this may be substituted a steam jet, in which case a water shower is arranged in the descending limb of the pipe to condense the steam.

In operating the apparatus the retort is charged nearly to the top with the ore mingled with carbonaceous matter, the producer is kindled, and as soon as its action is established so that no free oxygen can pass from it into the retort its feed valve is closed, and the fan or other draught-creating apparatus is put in action, so as to send a current of the gas from the producer into the retort. The gas thus supplied finding an annular space under the overhanging shoulder of the retort, can pass into and through the contents of the upper part of the retort, which it heats, becoming itself cooled. It then descends by the pipe, and may be conveyed away to be used for heating purposes elsewhere. When the heat thus delivered to the retort tends to become too great a portion, greater or less of the return gas is admitted to the inlet of the producer, and the air supply thereto is more or less checked, so that the combustion in the producer is retarded, and the production of gas is proportionally reduced without diminishing the volume of gas transmitted through the contents of the retort. Or the return gas may be directed to a greater or less extent into the outlet passage of the producer, so as to effect cooling without reduction of volume. By the passage of the hot gas through the materials in the upper part of the retort the ore become reduced as it descends, the reduction being completed at or near the overhanging shoulder, below which the contents of the retort consist of a mixture of spongy iron with carbonaceous matter and ash. This as it descends becomes somewhat cooled before it is withdrawn at the bottom mouth, and the cooling may be aided by providing the lower part of retort with a water-jacket.

QUICKSILVER CONDENSER.—The condenser invented by Mr. R. F. KNOX, of San Francisco, is constructed in two parts. The base is cast in one piece and its floor is made in the form of a V, so as to form a middle channel and inclined sides. The base is supported on suitable legs or supports, the length of which are regulated by the pitch of the inclined floor. The upper part of the condenser is made of sheet copper, a metal which will not be affected as readily as iron by the sulphurous acid which accompanies, to a greater or less extent, the quick-silver fumes produced from the raw ores, and which soon destroys iron condensers. Either the iron base or copper upper portion can be removed when necessary, and thus produce a considerable saving in the cost of condensers. The thinness of sheet copper also renders the condenser more effective, because it allows the heat to pass off more readily than through a thick iron condenser. The upper part of the condenser is made square, and provided with a pan top for holding water, as described in a previous patent by the same inventor. In addition to the pan top for holding water, Mr. Knox makes a well or hollow partition across the condenser near the opening through which the fumes pass out of the chamber, and this partition extends down inside of the chamber to within a short distance of the bottom so that the fumes must pass under it before they can pass out through the exit opening. This water partition or well communicates with the pan top, so that it is kept filled with water, and as the water in it becomes heated it will rise to the surface of the pan, and flow off while the cool water takes its place. This partition enables the inventor to draw off the coolest vapours first, as the vapour in the condenser will settle to the bottom as it becomes reduced in temperature, and will thus first pass under the partition.

MANUFACTURE OF ARTIFICIAL FUEL.

The manufacture of compressed coal bricks has received even more development in France than in this country, yet improvements are constantly being made, and amongst the more recent of these may be mentioned that of Mr. J. M. PAILLARD, of Paris, which consists in arranging the kneader or pug mill which, according to this invention, is placed in the centre of the machine between two compressing apparatus, which form the block, the machine being double acting and forming two blocks at a time. Each compressor is formed of two solid cheeks of cast-iron, bolted together and connected at the top. These cheeks are traversed by a shaft provided with cams, which has a continous rotary motion imparted to it from the counter shaft of the machine by the intervention of a wheel and a pinion provided with powerful teeth. From this cam shaft are derived the motions requisite for compressing the blocks, for securing (the "catch motion") the intermittent advance of the circular plate carrying the mould, and the lifting motion which pushes out or releases the block from the mould. The cam shaft communicates a reciprocating up-and-down motion to a compressing piston or plunger; its action is only effective in the manufacture of a block for that period of time during which it is engaged in the mould; it acts at first as a compressor during the greater part of its downward stroke, when it compresses the mixture in the mould, then towards the end of its stroke it continues the pressure while the mould descends suspended upon steel springs, and raises a double counterweight of suitable dimensions. This action of the counterweight may be increased or diminished if necessary, according to the dimensions of the block which it is desired to manufacture. At each extremity of the cam shaft there are provided two crank discs, the inner one of which is employed to effect the elevation of the block, or to push it out of the mould, while the other one serves to effect the intermittent rotary advance of the plate or table carrying the moulds.

To produce the catch motion the compressing piston is lifted up out of the mould so as to clear it to a sufficient extent, and the vertical stroke is utilised (as produced) in causing the plate carrying the moulds to advance one notch or tooth—that is to say, to cause the mould next following the one which has just been compressed to be presented to the action of the compressing piston. The crank disc is keyed on in such a manner that the crank stands nearly at right angles with the longest radius of the cam. The mechanism for imparting motion to the mould plate is composed of the crank disc carrying a steel crank pin, to which is attached one end of a connecting rod made in three parts, the heads of which are cemented. The opposite end of the connecting rod is fitted on a lower horizontal axis parallel to the axis of the cam shaft, to which horizontal axis there is connected a crank keyed on another shaft carrying a large lever; this lever is fitted at its upper end with a connecting pin and rod carrying the catch, which is provided with a steel jaw or shoe. The three heads of the rod work are on spherical joints; this is rendered necessary in consequence of the axis not being parallel and the curve described by the pin carried by the catch rod in its return, which is the effective stroke. The lower axis of the crank and of the large lever is inclined in such a manner in relation to the axis of the cam shaft that (considering the axis of the pin engaged in the catch as stationary) the catch rod only deviates from a line perpendicular to the pin to a very slight extent on either side. In order to obviate even this very insignificant amount of play a recess is formed in the front of the catch pin. The number of the catch pins provided is equal to the number of the moulds employed. In order to prevent the catch rod and the jaw with which it is provided from quitting the periphery of the plate carrying the moulds a cast-iron flange or rim is bolted on round the latter, forming an annular trough or ledge which holds the jaw to the side of the plate, carrying the moulds and inclines the catch rod into its various positions as required.

The lifting movement causing the blocks to rise up out of the mould is placed within the circular mould plate; it is actuated by the inner crank disc keyed upon the cam shaft. This mechanism is composed of a connecting rod connected at one end to the crank disc, and at its opposite end to one extremity of a lever of the first order with equal arms, the central axis of which is suitably supported while the other extremity acting as a cam is of cemented iron; this cam works between two steel keys, and alternately elevates and depresses a hollow cast-iron plunger, which strikes the bottom of the mould at a given moment and drives out the block. The action of this lifting mechanism takes place while the mould plate is stationary, and the cam shaft is compressing a block. The hollow cast-iron plunger is steadied in its vertical movement by two stationary collars or guides cast on the supports of the mould plate. These supports of the mould plates are six in number, and are all provided with rollers. The two which are in proximity to the releasing mechanism are provided with clamps, which embrace the plate and prevent it from being forced up with the mould under the action of the shock imparted to it by the releasing ram. Steel tappets bolted inside the frame of the compressing mechanism in like manner hold the mould plates above the moulds and maintain them perfectly stationary while the contents are being discharged. Between each mould, and at the centre of the interval there is provided an axis, serving to connect the two plates carrying the moulds together, which also serves as an axis for steel rods acting as springs, whose function it is to raise the moulds; these springs act from below upon sheet metal plates, each of which is bolted to the mould itself, and cut out in the middle nearly to the size of the mould, leaving a projecting ledge inside the mould all round. This rectangular zone within the mould serves as a support to the bottom of the mould, and when the compressing piston approaches the end of its stroke this rectangular zone is carried downwards, drawing the mould with it. The necessity for the intervention of this part, actuated by the springs in a contrary direction, is obvious, for these spring push up the mould when the compressing piston re-ascends.

When in the bottom of the mould the plate of sheet metal and the ends of the springs are depressed under the forcible action of the compressing piston the bottom of the mould is caused to actuate a slide working in two grooves in the frame. The upward stroke of this slide is limited by the end of the double groove, which serves as a guide to it; this slide actuates the counterweight levers. By means of this peculiar arrangement a pressure on the block of agglomerated matter of a maximum duration is obtained. This methodically slow and continous compression prevents the blocks from swelling, and consequently cracking, when released from the mould under the action of the releasing mechanism hereinbefore described. Four tappets or projections to each mould are bolted to the interior of the plates or rings, which carry the mould and hold by a hook the plate of sheet metal which is bolted to the mould itself; these hooks thus limiting the ascending motion of the mould when pushed up by the springs. The cam shaft is of iron cemented at the bearing surfaces. The cam acts downwords upon a key with a steel head. A lower cross piece fixed by a bolt to the two cheeks serves as a knife edge or centre of oscillation to the counterweight levers. At the end of each stroke of the mechanism for actuating the plates carrying the moulds a pawl acting inside the plates drops into a notch, and thus holds the said plates immovable during the two motions of compressing and releasing the block. This pawl is lifted out of the notch before the commencement of the rotary motion of the moulds by a simple automatic motion.

The central frame is composed of two cheeks, and is fixed to the ground by good foundations, and supported by an upper cross piece which supports the pug mill and the two conduits of sheet metal which feed the mixture into the moulds. The frame is also provided with two bearings or plummer blocks which support the shaft driving the compressors. The circular plate carrying the moulds presents them successively in the first place to the action of the compressing ram, and afterwards to the action of the releasing ram. This circular passes between the cheeks of the compressing frames. It is composed of two rings of cylindrical form, and each formed in three pieces, a cast-iron table with troughs, cross bars carrying the springs, the catching pins, and the moulds with their bottoms and counter plates.

The mechanism for transmitting the motion from one compressor to the other is composed of a shaft supported at each extremity by the frames of the compressing mechanism, and at the centre in two points by the frame of the pug mill. This shaft carries the two pinions provided with strong teeth for driving the compressors, and another pinion which drives the pug mill by the intervention of a star wheel and a pair of bevelled wheels; this shaft also carries two fly-wheels or pulleys, which cause it to rotate, being driven by the main shaft above. Whether for the manufacture of fuel, or for the production of bricks or blocks, for other purposes, the machinery is said to be very efficient.

Original Correspondence.

THE RICHMOND MINING COMPANY.

SIR,—A circular has been issued to the Richmond shareholders, by the signers of a requisition recently sent to the board, asking that the ordinary meeting should be called forthwith, and that at such meeting powers should be given to a committee of investigation to examine into the accounts here and in Eureka, to sift all titles and their bearing on present lawsuits, such committee to proceed to Eureka at the cost of the company, with full power to act in America on its behalf, as in their judgment shall be deemed expedient.

The circular gives the reasons for the step taken by the requisitionists, the motives assigned being—the duty of shareholders to look into their affairs, and *this* being the proper time to do so; the fact that for six years past the company has been continuously attacked by circulars here, and involved in lawsuits in America, the property having been unduly deprecated and jeopardised by these proceedings. As the circular states, "We do not propose this committee in a spirit of hostility to the directors," and admits the fact that "the shareholders throughout have given the board their fullest confidence," it is difficult to see the logic of asking the shareholders to confer on the committee asked for the whole power and functions of the board, so far as America is concerned, which is virtually to control the whole business of the company, and to submit to such committee the position and acts of Mr. Probert, the managing director at Eureka.

As the company has been and is a most prosperous one, successful beyond any other mining property in America, in spite of the numerous attacks by circulars here and unprincipled lawsuits got up in America, the directors would seem to have justified by such good results the confidence reposed in them. As the titles have been sifted by eminent counsel in America, and all flaws suggested remedied, so as to defy the series of attacks since levelled at them, and as the present suits do not turn so much on former titles as on the right to take up new ones to fresh claims, resisted on a preposterous pretended ledge theory set up to include the whole of Ruby Hill under such a designation, the proposed investigation by the requisitionists is either too soon or too late—too soon for the fresh titles to be obtained, too late for those which are already proved to be indefensible.

The trial is fixed for the 23rd, and within a week it is probable that the judge's decision will be known. It was evidently most important that no appearance of division among the Richmond shareholders should be cabled out to Eureka to encourage our opponents, and dishearten those who have been working so skilfully and heartily in the best interest of the company, yet this is the time chosen by the requisionists to ask for a committee to investigate titles bearing on suits which will be settled definitely one way or the other ere they could possibly commence their labours. It is scarcely possible to imagine a course of proceedings less likely to benefit themselves or their fellow-shareholders.

AN OLD SHAREHOLDER.

[For remainder of Original Correspondence see this day's Supplement.]

Registration of New Companies.

The following joint-stock companies have been duly registered:—

COSSALL COLLIERY COMPANY (Limited).—Capital 45,000*l.*, in 100*l.* shares. To carry on business as colliery proprietors, iron and coal masters, brick and tile merchants, &c. The first seven subscribers are Alfred Hewlett, the Grange, Coppull, Lancashire, 45; C. O. Pearce, Brought n Vale, Brigg, Lincashire, farmer, 45; W. H. Hewlett, Strickland House, Standish, Lancashire, coal and iron master, 45; M. H. Pearse, Ashfield, Standish, solicitor, 45; J. Darlington, Meerlen Hall, Warwick, 45; G. B. Finch, 2, New square, Lincoln's Inn, 45; E. Hewlett, Camelford, Cornwall, 45. The directors are—Messrs. Alfred Hewlett, J. Darlington, J. Booth, G. B. Finch, and S. J. T. Lynch. The qualification, except in the case of Mr. Lynch, who will occupy the position of director without qualification, is the holding of shares to the value of 20 0*l.*

ALBERT HALL MANSIONS COMPANY (Limited).—Capital 100,0 0*l.*, in 1*l.* shares. To acquire mansions at Kensington Gore to be built upon the "Flat System." The subscribers, who take one share each, are Herbert E. Borrow, 12, Finborough Park, solicitor; E. H. Richards, Lower Sydenham; John Kynaston, 5, Endsleigh street, Tavistock-square; Richard Nelson, 10, Basinghall-street; L. Gasquet, The Woodlands, Barnes; H. J. Urquhart, King's-road, Bedford-row; T. Hussey, 96, Kensington High street.

ROYAL SEWING MACHINE COMPANY (Limited).—Capital 70,000*l.*, in 20*l.* shares. To acquire the business of the Royal Sewing Machine Company, carrying on business at Smallheath, Birmingham. The subscribers, who take one share each, are—T. Shakespeare, The Hawthorn, Wordsworth road, Smallheath, Birmingham; G. Illston, Green Lane, Birmingham; E. D. Prideaux, 66, Moseley-road, Birmingham; H. Revill, Cattell road, Birmingham; W. Hockley, Muntz-street, Birmingham; G. Hall, Heaton road, Birmingham.

ENFIELD STUD COMPANY (Limited).—Capital 50,000*l.*, in 5*l.* shares. To acquire the goodwill of the business of F. Ridgeley and Co., breeders and dealers in horses, &c., of Hollyhill Farm, Enfield. The subscribers, who take one share each, are—F. Ridgeley, Hollyhill Farm, Enfield; T. B Michell, Winchmore Hill; C. D. Botterill, Grove Villa, Wood Green, N.; W. Philpot, Lavender Grove, Dalston; C. J. Schnedam, 8, Old Jewry; J. Bradbury, Lofthouse place, Leeds; J. Botterill, Wood Green, N.

HOUSE AND LAND HIRE AND PURCHASE ASSOCIATION (Limited).—Capital 25,000*l.*, in 10*l.* shares. To purchase, let, or sell, houses, &c. The subscribers reside in Ipswich.

DIRECT UNITED STATES CABLE COMPANY (Limited).—Capital 1,200,000*l.*, in 20*l.* shares. To take over the business, assets, and property of the Direct United States Cable Company (Limited). It is quite a formal reconstruction. The subscribers (who take one share each) are—John Pender, 66, Old Broad-street; W. Ford, Hertson Villa, Kensington Park road; C. J. Gunther, Hill Lodge, Champion Hill; Lord Hawke, Wighell, near Tadcaster; R. C. Mayne, 101, Queen's-gate, Kensington; C. Meara, Antwerp; G. Underdown, 3, King's Bench-walk, Temple.

CLAYTON ESTATES COMPANY (Limited).—Capital 40,000*l.*, in 10*l.* shares. To acquire an estate for building purposes at Clayton, Lancashire. The subscribers (who take 20 shares each) are—G. Bedson, Bradford, Manchester; Robt. Wilson, Beswick, Manchester; W. Thompson, Masley Hotel, Beswick; N. Hayes, Oldham-road, Manchester; W. Hoyland, Beswick; J. Hampson, Bradford, Manchester; E. Williams, Alley Cottage, Bradford, Manchester.

TANGYE'S MACHINE TOOL COMPANY (Limited).—Capital 24,300*l.*, in 150*l.* shares. To carry on business as machine tool manufacturers, at Birmingham. The subscribers are—R Tindal, Pickering, York, 30; J. E. Stone, 198, Lichfield road, Aston, Birmingham; H. Guyett, jun., Yardley, Worcestershire, J. L. Brunton, 79, Vauxhall-road, Birmingham; W. Cooke, Birmingham; J. Sadler, 6, Waterloo-street Birmingham; S P Ryland, Erdington, Warwickshire.

ROYAL SCOTCH ARMS HOTEL AND RESTAURANT COMPANY (Limited).—Capital 30,000*l.*, in 5*l.* shares. To acquire the Royal Scotch Arms Inn Newcastle upon-Tyne. The subscribers are—W. Bell, Newcastle, 400; W. G. Bolam, Newcastle, 400; W. H. Darnell, Newcastle on Tyne, 50; G. G. Taylor, Newcastle, 20; N. W. I. Vaughan, Newcastle, 10; R. C. Slater, Newcastle, 5; N. Reed, Newcastle, 20.

PATENT STRAW COMPANY (Limited).—Capital 10,000*l.*, in 10*l.* shares. To deal in stable manure, &c. The subscribers are—E. Airgdon, 94, Harley-street, 25; J. Gordon, 5, The Crescent, Clapham Common, R. Dee, 25, Mornington-road, 2; N. W. E. Holt, New Bond-street, 2; C. Parmacott, Strandlake Villas, Shepherd's Bush; W. Clarke, Kensington Park Gardens; H. O. Clarke, 66, Gresham House.

WYRE SHIPPING COMPANY (Limited).—Capital 60,000*l.*, in 5*l.* shares. To carry on the general business of a shipping company. The subscribers are—J. Wignall, Fleetwood, 1; D. Dugdale, Accrington, 1; W. Whittaker, Church, J. A. Gardner, Preston, 6; John Ball, Fleetwood, 4; T. Drewry, Fleetwood, 1; W. Jones, Fleetwood, 1.

BRANDON AND COMPANY (Limited).—Capital 16,000*l.*, in 100*l.* shares. To carry on business as artificial florists and jewellers, &c. The subscribers are—C. J. Lacey, jun., 60, West Smithfield, 20; R. C. Michell, Richmond, 30; John Meadows, Alexander-terrace, Addiscombe, 20; C. Foulsham, Willesden-lane, 30; Arthur Brandon, 6, Hillside, Cricklewood, 5; A. E. Brandon, Cricklewood, 2.

BORING-MACHINES.—At the South Caradon Mine meeting Capt. Holman said that since the last meeting he had by desire of the shareholders been to West Maria and Fortescue and seen the boring-machines at work there. They certainly worked well—better than he expected; opening up the hard ground very fast, and at a great saving. He was of opinion that these machines would soon come into use very generally, and be as common as steam-engines. One would be of great use to them in South Caradon, but he would not be in a hurry to put one in. He would rather wait a little and see

what improvements would be made, and watch the result of the experiments now being carried on.

WATSON BROTHERS' MINING CIRCULAR.

Ten years ago the weekly information which had previously been published for a great number of years in WATSON BROTHERS' Mining Circular was transferred to the columns of the *Mining Journal*, with the following announcement; which is now reproduced in consequence of the numerous letters and enquiries handed to them of late in reply to one which appeared in the Journal on the Clementina Mine.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash or for the usual fornightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charges for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in upon the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

In the year 1843, when mining was almost unknown to the general public attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to *recommend* mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

WATSON BROTHERS,
MINEOWNERS, STOCK AND SHARE DEALERS, &c.,
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

PARYS MOUNTAIN.—The idea of dividing this sett, which is larger than three or four ordinary mines put together, arose from offers made for 2000 to 3000 tons a year of blue stone (zinc) at Morfa-du, which upon a small outlay would at once yield a large annual profit. A few years ago an engine was erected to raise this stuff, and a cargo sold, but the price of it was then too low, and all the Parys capital was required at that mine. Under the present company Parys has sold copper ores to the value of over 40,000*l.*, and would have made a large profit had copper kept its price. The grand speculation, however, and there is nothing equal to it in the market, is driving the 90 cross-cut south to get under the great open cast, from which a profit of five millions sterling was realised. In this cross-cut there is every indication of a lode near at hand, but the company have been short of capital. Should the Morfa du shares be subscribed for, and there is little doubt of it, for many, like ourselves, will be glad to get more than they are entitled to, a capital of 5000*l.* will be secured by Parys, which ought to send up the shares more than cent. per cent., and Morfa-du having a capital of 6500*l.* should reach a high premium from its known value for blue stone, and for its prospects for copper. We certainly then advise all shareholders in the Parys Mountain to secure all they are entitled to in Morfa-du.

SATURDAY, JULY 14.—There is very little doing to day, and prices are merely nominal. Tankerville, 7¼ to 7¾; Roman Gravels, 8⅞ to 9⅛; Van, 33 to 34; North Laxey, 17s to 19s.; Great Laxey, 20 to 21; Glenroy, 20s. to 25s.; Rookhope Lead, 20s. to 22s. 6d.; Leadhills, 5½ to 6; Parys Mountain, 11s. to 13s.

MONDAY, JULY 16.—Market continues very quiet. Roman Gravels weaker at 8⅞ to 9⅛; East Van, 5¾ to 5⅝; Tankerville, 7¼ to 7⅜; Devon Consols, 4¼ to 4⅜; Ladywell, 7⅛ to 1⅛; Van, 33 to 34; Van Consols, ⅛ to ⅜; Glpn, 6s. to 8s; Parys Mountain, 11s. to 13s.; West Chiverton, 14 to 16; North Laxey, 17s. to 19s.

TUESDAY, JULY 17.—Market again quiet, without any material changes in yesterday's prices.

WEDNESDAY, JULY 18.—Market dull, and prices nominal. Tankerville, 7 to 7⅛; Roman Gravels, 8⅞ to 9⅛; Great Laxey, 20 to 21; East Van, 5¼ to 5¾; Glenroy, 20s. to 25s; Leadhills, 5¾ to 6; Ladywell, 20s. to 22s. 6d.; Marke Valley, 1¼ to 1½; North Laxey, 17s. to 19s.; Parys Mountain, 9s to 11s.; South Condurrow, 7⅛ to 8; Van, 32 to 34; West Chiverton, 14 to 16; West Tankerville, 17s. 6d. to 20s; Creber, 1½ to 2; Grenville, 25s. to 30s.; Devon Consols, 4¼ to 4½; Carn Brea, 27 to 29.

THURSDAY, JULY 19.—Market again very quiet, and prices are about the same as yesterday. Van, 32 to 34; Tankerville, 7 to 7½; Leadhills, 5¾ to 6; Parys Mountain, 10s. to 12s.; Roman Gravels, 8¾ to 9¼; Devon Consols, 4 to 4⅛; Great Laxey, 20 to 21; Rookhope, 20s. to 22s.; North Laxey 17s. to 19s.

FRIDAY, JULY 20.—Market continues very inactive and prices generally are merely nominal. East Van, 5¾ to 5⅝; Glenroy Lead, 20s. to 22s. 6d.; North Laxey, 17s. to 19s.; Van, 32 to 33; Tankerville, 7⅛ to 7¼; Roman Gravels, 8¾ to 9¼; Parys Mountain, 9s. to 11s.; Ladywell, 20s. to 22s. 6d.; Devon Consols, 4 to 4⅛; West Tankerville, 19s. to 21s.; Carn Brea, 26 to 28; Tincroft, 12 to 14.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week the business transacted has again been on a very limited scale. In shares of iron and coal concerns Bolckow, Vaughan, A, have advanced 5s. per share, while Ebbw Vale are reduced 7s. 6d; Scottish Australian, 2s. 6d.; ditto (new), 1s. 3d., and Armston, 1s. A very favourable report has been issued concerning Chapel House. The meeting of the Fife Company is on the 25th inst. Andrew Knowles and Sons are at 20s. prem. Benhar (old), 8¾ to 8¾; ditto (new), 7/. 18s. 9d. to 8/. Bolckow, Vaughan, B, 85. Cardiff and Swansea, 25s. Crown Preserved 27s. 6d. Darlington, 12 dis. Great Western, 50s. Henry Beggs, A, 14; ditto, B, 9½. John Bagnall and Sons, 42s. 6d. Llynvi, Tondu, and Ogmore, 5. Mersey, 35s. dis. Nanty y Glo and Blaina (deferred), 30s. Newport Abercarn, 75s. New Sharlston (pref.), 7½. Oakham, 10s. Pelsall, 11½ to 12 dis. Rhondda-Merthyr, 12½. Scottish Australian (new), 6s. 3d. to 8s 9d. Sheepbridge, 7½ dis. South Wales, 7. Staveley, C, 88. Tredegar, A, 16. West Ardeton, 1½. to 15s. Whitwick 6 per cent. (pref.), 10½. In shares of foreign copper concerns, Tharsis, old and new, are each 2s. 6d. lower, and Huntington has advanced a similar extent. Russia have been done at 40s. The arrangement whereby the accumulated interest is disposed of, leaving the future profits available for payment in full of the guaranteed dividends and possibly of some return for the ordinary shareholders, has directed more attention to the Yorke Peninsula Company; preference shares are at 18s. 9d. to 22s. 6d.; ordinary, 4s. to 6s. Fronmae Lead are at 17s. 6d. Huitafall, 6. New Quebrada, 40s. Panulcillo, 25s. Rio Tinto 5 per cent., 53¾.

In shares of home mines business is at a stand, buyers continuing scarce. Aberdaunant are at 12s. 6d. Bampfylde, 7s. 6d. to 12s. 6d. Bodidris, 12s. 6d. to 17s 6d. Central Van, 22s. 6d. Clementina, 45. Denbigh Consols, 15s. to 30s. Dyffryn, 18. Devon Consols, 87s. 6d. Gorsedd and Merilyn, 95s. Glyn, 2s. 6d. to 7s 6d. Great Laxey, 20¼, ex div. and bonus. Gunnislake (Clitters), 30s. Great Retallack, 2s. 6d. Killifreth, 8s. 9d. Kingston Consols (pref.), 12s. 6d. Leadhills, 6. Llangan, 95s. Llanwrst, 50s. Mellanear (35s. paid), 45s. Monydd Gorddu, 45s. Mwyndy, 40s. North Laxey, 15s. to 17s. 6d. Pandora, 30s. Pennant, 55s. to 95s. Prince of Wales, 9d. Red Rock, 45s. Roman Gravels, 9 to 9½. St. Patrick, 27s. 6d. South Condurrow, 8. Tankerville, 7¾. Van Consols, 2s. 6d to 7s. 6d. West Assheton, 10s. to 15s. West Frances, 45s. West Tolgus, 6/. Wheal Agar, 65s. In shares of gold and silver mines the only movement is a fall of 2s. 6d. on Richmond, at 6½ to 6¾. Almada are at 2s. 6d. to 5s. Antioquia, 1s. d. Cedar Creek, 9s. Chicago, 45s. Chontales, 8s. Eberhardt, 6¼. Emma, 1s. 6d. to 3s. 6d. Exchequer, 5s. Frontino, 60s. Flagstaff, 65s. I X L., 6s. 3d. Last Chance, 10s. to 15s. Lanzi (pref.), 10¼. Pestarena United, 4s. South Aurora, 3s to 5s. St. John del Rey, 260.

In shares of oil concerns Young's Paraffin have improved 3s. 9d. and Uphall 1s. 3d. Dalmeny might now be had at 7¼; Runcorn done at 60s. dis. In shares of miscellaneous companies Phospho Guano were done at 11½, or 2s. 6d. lower, and are now 10¾ to 11. The Scottish Wagon dividend is to be 6 per cent., or the same as the two previous distributions; the balance to next account is 1062*l.*, and the meeting will be held on the 23rd inst. Bede Metal and Chemical are at 17⅜; Bridgefield and Victoria Salt, 80s.; Earle's Shipbuilding, 8; General Sewage, 8 dis.; Hopkins, Gilkes, and Co., 7⅞ dis.; Langdale's Chemical, 72s. 6d.; Lawe's Chemical, 6/. 15s. 9d.; and Newcastle Chemical, 52s. 6d.

SHOTTS IRON COMPANY.—At the special meeting on Friday last Mr. Lindsay, who occupied the chair, submitted the company's Act of Parliament, which received the Royal assent on May 17 last, and, as empowered therein, moved a resolution increasing the capital by the creation of 15,000 preference shares of 10*l.* each, bearing a preferential dividend of 5 per cent. per annum, with option to convert into ordinary stock. This was agreed to, and terminated the proceedings.

Subjoined are this week's quotations, &c., of mining and metal shares quoted on the Scotch Stock Exchanges:—

Capital. Per share.	Paid up.	Dividends. Rate per cent. per annum. Previous.	Last.	Description of shares.	Last price.
				COAL, IRON, STEEL.	
£10	£7	£ 8½	£ 6½	Arniston Coal (Limited)	7/. 19s.
10	10	6	6	Benhar Coal (Limited)	8¼
10	10	6	6	Ditto	7/. 18s 9d
100	50	18s 9d †	1. 4 1s 6d †	Bolckow, Vaughan, and Co. (Lim.)	A. 53¼
10	10	10	10	Cairntable Gas Coal (Limited)	8
10	10	nil	—	Chillington Iron (Limited)	80s.
32	29	nil	nil	Ebbw Vale Steel, Iron, and Coal (Lim.)	9¼
10	5	nil	nil	Fife Coal (Limited)	80s.
10	10	nil	nil	Glasgow Port Washington Iron & Coal (L)	35s.
10	10	—	—	Ditto Prepaid	35s.
10	10	—	—	Lochore and Capledrae (Limited)	82s. 6d.
10	10	nil	3	Marbella Iron Ore (Limited)	69s. 6d.
10	10	nil	nil	Monkland Iron and Coal (Limited)	51s.
10	10	5	4	Ditto Guaranteed Preference	5
100	100	nil	nil	Nant-y-Glo & Blaina Ironworks pref. (L)	19½
6	5½	nil	nil	Omoa and Cleland Iron & Coal (L. & Red.)	20s.
1	1	15	17½	Scottish Australian Mining (Limited)	1⅛
1	8s.	15	17½	Ditto New	7s. 6d.
Stock	100	5	nil	Shotts Iron	91
				COPPER, SULPHUR, TIN.	
4	4	—	—	Canadian Copper and Sulphur (Lim.)	5s. 3d.
10	7	20s ‖	20s ‖	Cape Copper (Limited)	37
1	1	15	7½	Glasgow Caradon Copper Mining (Lim.)	24s.
1	15s.	15	7½	Ditto New	16s. 6d.
10	9¼	nil	nil	Huntington Copper and Sulphur (Lim.)	26s.
25s.	23s.	—	—	Kanunda Mining (Limited)	6/.
4	4	—	—	Panulcillo Copper (Limited)	25s.
10	10	nil	nil	Rio Tinto (Limited)	75s.
20	20	—	7	Ditto, 7 per cent. Mortgage Bonds	13
100	100	—	5	Do. 5 p.ct. Mor. Deb. (Sp.Con. Bds.)	54
10	10	nil	nil	Russia Copper (Limited)	40s.
10	10	22½	20	Tharsis Copper and Sulphur (Limited)	23⅞
10	7	22½	20	Ditto New	16⅛
1	1	—	—	Yorke Peninsula Mining (Limited)	7s. 6d.
1	1	—	—	Ditto, 15 per cent. Guaranteed Pref.	21s. 3d.
				GOLD, SILVER.	
1	1	—	—	Australian Mines Investment (Limited)	8s. 9d.
5	5	7s. 6d ‖	7s. 6d ‖	Richmond Mining (Limited)	6½
				OIL.	
10	7	5	6	Dalmeny Oil (Limited)	8¼
1	1	—	7½	Oakbank Oil (Limited)	46s.
1	5s.	—	7½	Ditto	12s.
10	10	—	2½	Uphall Mineral Oil (Limited) "A"	8/. 12s 6d
10	10	—	—	Ditto "B" Deferred	10
10	8½	5	9	Young's Paraffin Light & Mineral Oil (L)	14/. 8s 9d
				MISCELLANEOUS.	
50	25	10	5	London and Glasgow Engineering & Iron Shipbuilding (Limited)	26¾
20	14½	—	—	Peruvian Nitrate (Limited)	10½
7	7	20	10†	Phospho Guano (Limited)	11⅜
10	10	6	6	Scottish Wagon (Limited)	11⅛
10	4	6	6	Ditto New	88s. 9d.

† Interim. ‖ Per share.

Last day for this account, July 27; settling day, July 31.

NOTE.—The above lists of mines and auxiliary associations are as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in these lists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, July 19.

THE LEADHILLS MINES.—Every shareholder who visits the Leadhills Mines appears to be at once impressed with the value of the property, and the Special Commissioner of the Stirling Journal having visited the property for Mr. J. GRANT MACLEAN, sharedealer, of Stirling, has given a very interesting account both of the journey to and from the mines and of the mines themselves. He states that the lodes or veins of metal are so rich and extensive that the cuttings are often as much as 7 ft. wide, and on an average 12 ft. high, so that he could walk upright with perfect ease, the comfort being only disturbed by the presence of considerable quantities of water. He found miles of roads underground, and learned that there were from 200 to 300 men constantly at work there. Each shot he was told brings away about half a ton of ore, and this when freed from the worthless portions is sent in wagons to the dressing-floors. The men work eight-hour shifts, and earn from 1*l.* to 1*l.* 2s. per week. The property is easily reached by those disposed to pay it a visit, being near the Leadhills Station, on the Caledonian main line, 57 miles from Stirling, and 52½ miles from Carlisle, and there can be no doubt that shareholders will derive equal pleasure and profit from undertaking the journey. [It is but fair to state that the reprinting of the Special Commissioner's historical details is unnecessary, as he has taken them *verbatim* from Mr. Tredinnick's communication "God's Treasure House in Scotland," published in the *Mining Journal* of June 16.]

PULVERISING MINERALS.—A simple apparatus, intended principally for disintegrating superphosphates, clay, earth, coal, or other minerals has been invented by Mr. H. and E. ALBERT, of Biebrich-am-Rhein, and consists chiefly of a peculiarly constructed open drum and wheel. Upon an axle mounted on suitable bearings is keyed a boss having a disc at one end. To this disc are bolted (say) four arms, near the extremities of which is fixed a concentric ring; parallel to this ring are two other rings of similar diameter, and these rings are connected to the former by a series of cross stays or rods, both at their points of junction with the arms, and also at intermediate points. Thus it will be seen that an open drum or wheel will be formed, having arms at one side only, and mounted upon an axle to which a rapid revolving motion (say, from 300 to 500 revolutions per minute) is imparted by means of a strap or belt passing round a pulley keyed on one end of the axle. The superphosphate or other material to be pulverised is delivered by means of a hopper into the interior of this drum or wheel, and in falling it meets with the cross stays or rods in their rapid revolution in the reverse direction, and becomes thereby thoroughly pulverised or disintegrated. A movable hood is placed over the upper half of the drum or wheel. In a modification of this invention the hopper is placed so as to deliver the superphosphate or other material on to the outside of the wheel instead of the inside, in which case the drum or wheel may have arms on both sides of the boss.

CALORIC ENGINES.—With the object of producing a powerful caloric engine working with greater regularity than has heretofore been obtained, so that it may be employed in substitution for the steam-engine in all its various applications, Messrs. J. and W. T. BUCKETT, of Gravel-lane, Southwark, propose some important improvements. One part of their invention relates to the general arrangement of the engine as regards stability and durability, and consists in mounting the whole of the parts hereinafter mentioned on a single base plate, also in the employment of wrought-iron retorts, and in arranging different the airways in such a manner as to admit of their being cleaned out without difficulty. The regularity of the motion of the engine is obtained by employing two working cylinders, the pistons acting alternately on each end of a rocking beam; at the same time these pistons and cylinders are so arranged as to feed the retort with the necessary quantity of cold air to be heated therein. In addition to the general arrangements, the invention consists in providing manholes in each of the working cylinders to enable them to be cleaned out without removing the pistons. An improved form of governor valve consisting of a hollow piston, which by the action of the governor directs a portion or the whole of the air which is being pumped into the retort so as to pass through or over the fire in order to regulate the heat and hence the speed of the engine. The replacing the usual leather packings of the pistons (which are soon burnt) by metallic rings. A new and improved arrangement of the inlet and exhaust valves, which consists in working them by means of eccentrics. Placing the crank shaft low down between the working cylinder in order to increase the stability and economise space. An improved form of the inner feed valve, which is constructed in the shape of a cone of a sufficient angle to prevent the dust of the fuel lodging on it, which would impede its closing air-tight; and the fixing an extra beam on the rocking shaft when the engine is intended for pumping, which beam is parallel with the beam of the engine, and by the two connecting rods, one fixed at each end of it, works the pumps by direct action; also when the engine is intended for pumping they make one of the standards of the crank shaft partially hollow, so as to form an air vessel, and the top surfaces on each side of the bearing of the crank shaft are planed level, and contain the delivery valves of the pumps, which pumps are bolted on to such level surfaces.

FUEL ECONOMISING FURNACES.—It is well known that much fuel is now wasted in the form of smoke and soot, and also passes off in the form of gas fit for fuel, but which is not consumed. Mr. R. L. Walker, of Boston, U.S., therefore, proposes to use two separate and distinct fire-boxes, so arranged with flues and dampers that the products of combustion from either fire-box may be compelled to pass through the other. Applied to an ordinary tubular furnace there are two fire-boxes of any suitable construction, with bridge walls and flues leading from them. These flues are separated from each other by a wall, except near their ends, where they are connected by a throat. There are two flues, through which alternately the products of combustion pass from the fire-boxes through the tubes of the boiler and into a chimney, and a damper is so arranged that it will close either of the two flues. Both the arrangement and operation are very simple. Suppose the fire in one fire-box is burning brightly, and that fresh fuel is to be put into the second fire-box, a damper is brought over one flue by means of its handle; consequently all the products of combustion—smoke, soot, and gases—from the second box will pass over its bridge wall along the second flue, through the throat, along the first flue, and over the bridge wall into the first fire-box, and over the glowing fuel in this fire-box, and out of this fire-box through the flue into and through the tubes of the boiler, and thence into the chimney. When the fuel in the second fire-box has ceased to emit smoke, and is glowing, the mere movement of a damper reverses the draught, and the other furnace is charged with fresh fuel. The fuel is thoroughly consumed, and the utmost possible quantity of useful work is got out of it. The invention is also applicable to metallurgical furnaces, and is, of course, capable of modification in detail without affecting the principle.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
June 30	Gorsedd & Merllyn	50	£14 10 0	Walker, Parker, & Co.
	New Cwm Elan	15	11 19 0	Nevill, Druce, & Co.
	New Llanganog	40	12 11 6	Walker, Parker, & Co.
July 14	Foxdale	110	18 17 0	Nevill, Druce, & Co.
17	Central Foxdale	44	12 10 6	Weston, Son, and Co.
19	Foxdale	75	12 5 0	Nevill, Druce, and Co.
	Great Dyliffe	80	12 9 6	Sheldon, Bush, and Co.
	Kingston Consols	8 6 0	15 13 6	Nevill, Druce, and Co.
	ditto	4 10 0	10 1 6	ditto
	Wye Valley	70	12 8 0	—

BLENDE.

Date.	Mines	Tons.	Price per ton.	Purchasers.
July 19	Kingston Consols	29 6 0	£ 4 2 0	Dillwyn and Co.
	ditto	30 0 1	2 9 6	Villiers Spelter Co.
	West Tankerville	20	3 15 6	Dillwyn and Co.

BLACK TIN.

Date.	Mines.	Tons c. q. lb.	Price per ton.	Amount.	Purchasers.
July 12	West Godolphin	8 17 2 10	£39 10 0	£351 14 6	Bolitho.
16	ditto	7 8 3 16	—	294 1 0	ditto

TIN BARILLA.

Date.	Tons.	Price per ton.	Purchasers.
July 18	6¼	£35 15 0	T. Bolitho and Sons
	9	31 5 0	Redruth Tin Smelting Co.
	10¼	31 2 6	R. R. Michell and Co.
	5¾	31 10 0	ditto

PERUVIAN TIN ORE SOLD IN LIVERPOOL.

Date.	Tons.	Price per ton.	Purchasers.
July 18	6¼	£35 15 0	T. Bolitho and Sons.
	2½	40 0 0	ditto
	9	31 5 0	Redruth Tin Smelting Co.
	10¼	31 2 6	R. R. Michell and Co.
	5¾	31 10 0	ditto
	2½	40 0 0	Danbuz and Co.
	4¾	37 0 0	T. Bolitho and Sons.
	2½	38 0 0	ditto

COPPER ORES.

Sampled July 3, and sold at the Royal Hotel, Truro, July 18.

Mines.	Tons.	Price.	Mines.	Tons.	Price
Devon Great Consols	49	£5 16 6	Gunnislake (Clitters)	87	£3 16 6
ditto	94	2 2 6	ditto	86	4 9 0
ditto	92	2 5 0	ditto	79	4 4 6
ditto	89	5 14 6	ditto	65	4 0 6
ditto	82	2 1 6	Glasgow Caradon	74	4 5 6
ditto	74	6 11 6	ditto	73	5 0 6
ditto	72	6 10 6	ditto	70	4 19 6
ditto	71	2 5 6	ditto	28	3 0 0
ditto	68	2 0 6	Hingston Down	74	2 12 0
ditto	66	2 2 6	ditto	50	2 8 6
ditto	58	1 15 6	ditto	49	2 6 6
ditto	53	5 17 0	ditto	27	2 9 6
ditto	6	31 14 6	Brookwood	59	3 2 0
South Caradon	66	3 18 6	ditto	58	2 2 0
ditto	64	3 19 6	ditto	57	3 0 6
ditto	60	1 4 6	ditto	26	7 14 6
ditto	57	5 7 0	Wheal Crebor	24	2 13 0
ditto	51	11 1 6	ditto	81	2 15 6
ditto	49	11 3 6	ditto	31	0 19 6
ditto	48	7 5 6	West Maria & Fortescue	88	2 11 6
ditto	45	6 7 6	ditto	48	1 5 6
ditto	30	16 10 0	Bedford United	88	2 15 6
Marke Valley	82	4 13 6	ditto	46	3 4 6
ditto	72	3 1 0	East Caradon	54	3 12 6
ditto	70	3 4 6	ditto	46	3 14 0
ditto	54	3 6 0	Prince of Wales	51	2 16 0
ditto	30	1 19 0	ditto	48	2 15 0
ditto	27	5 11 0	Wheal Russell	45	1 15 0
ditto	25	3 2 0	Belstone	23	4 19 0

TOTAL PRODUCE.

Devon Great Con.	924	£3660 9 6	Wheal Crebor	196	£ 477 12 0
South Caradon	470	3135 7 6	West Maria, &c.	136	287 16 0
Marke Valley	360	1292 15 0	Bedford United	134	392 11 0
Gunnislake (Clit.)	317	1310 17 6	East Caradon	100	365 19 0
Glasgow Caradon	245	1115 8 6	Prince of Wales	97	271 12 0
Hingston Down	200	494 8 0	Wheal Russell	45	78 15 0
Brookwood	200	677 19 6	Belstone	23	103 10 0

Average standard ..... £ 99 7 0 | Average produce 6¾
Average price per ton £3 19 6
Quantity of ore ..... 3447 | Quantity of fine copper 232 tons 19 cwts.
Amount of money £13,665 0 6
LAST SALE.—Average standard ..... £ 99 0 0 | Average produce 7⅝
Standard of corresponding sale last month, £103 11 0—Produce, 6⅝

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Vivian and Sons	881	£3410 5 6
Grenfell and Sons	396	1590 14 0
Nevill, Druce, and Co.	494	1889 7 6
Williams, Foster, and Co	1125	3923 15 6
Charles J. Lambert	641	2834 18 0
Total	3447	£13,665 0 6

Copper ores for sale, at Swansea, July 24.—Betts Cove 93, 93, 93, 92, 92, 92, 115, 114, 108, 108—Union 100, 100, 95, 115—New Quebrada 78, 78, 78, 78, 78—Berehaven 106, 100, 100, 2—Knockmahon 133, 101, 29—Cavera 75, 75, 74—Aljustrel 76, 75—Burnt Ore 80—Cronebane 78—Portuguese 41—Copper Slag 23, 9—Cuba Precipitate 15, 10—Tan-y-bwlch 18—Copper Regulus 9, 6.—Tons, 3035 tons.

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Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, July 18: We are pushing on the sinking of the new shaft towards a deeper level as fast as possible, and are making good progress in doing so; it is now sunk 6 fms. below the deep adit level. In the east part of the sett (Crowlwn.), in the cross-cut driving towards the new lode, the water is still issuing free y from the bottom of the level, but we have not yet cut through any more branches since last reported on.

BEDFORD UNITED.—R. Goldsworthy, William Phillips, July 19: The lode in the 138 east is worth 30l., the western end 20l. per fathom. We are driving by the side of the lode in the 127 east and west. The lode in the 1 5 east has improved, now worth 16l. per fathom. No other change to notice. The weather has prevented the masons from working, consequently we have not been able to start the engine till this afternoon.

BLUE HILLS.—S. Bennetts, A. Gripe, July 14: In the 80 cross-cut north we have just cut into a portion of the lode, and although somewhat unsettled it con tains some capital stones of tin. In the course of another week we shall be able to see more of it, but thus far it is very encouraging. In the stope from the rise over this level the top lode has improved, and is now worth 10l. per fathom. The north lode, too, is opening out very satisfactorily in the 30 east end, where it is at present worth 10l. per fathom, and the ground both favourable for driving and for the production of tin. Therefore, on the whole, the prospects of the mine look cheering.

BODIDRIS.—H. Hotchkiss, July 18: Setting Report: The 60 to drive east, on main lode, to six men, at 11l. 10s. per fathom. for 1 fathom; the lode in this end is still 18 in. wide, with well defined walls, and of the same favourable appearance as for some time past; the lode is spotted with lead ore and blende. I am daily expecting a more favourable improvement to take place here. The cross-cut to drive south, towards the Maes y-pwll lode, to four men, the month, at 3l. 15s. per fathom; the end is favourable for driving, and very good progress is being made in this end. The 45 to drive east, on main lode, to six men, the month, at 8l. 5s. per fathom; there is no material alteration in this driving worthy of remark since my last. I have this morning put the two men I had stoping in back of this level to commence a stope in bottom of this level, about 20 yards back from the fore breast, where there is some good ore going down. The 30 yard level to stope, in the bottom of the level, by two men, at 6l. per cubic fathom; the lode in bottom of the stope is taking a more perpendicular course again, and has become somewhat close the last few days, but is producing nice cubes of lead ore. The above prices include all cost. I am pleased to say that all points of operation are going on regularly, and with as much speed as possible.

CLEMENTINA.—W. Bennetts, July 18: There is nothing calling for remark in the mine since last report.

COMBMARTIN.—E. Hosking, July 16: On Saturday last, being payday, the following bargains were set: To drive the 37, east of the winze, by four men, at 7l. per fathom; the lode will yield 7 cwts. of silver lead per fathom. To drive the 37 cross-cut north to intersect the lode to the west of the cross-course, by two men, at 4l. per fathom; we expect to drive about 9 ft. to cut the lode, and seeing that nothing has been seen of the lode to the west, we think it important to see the same as soon as possible. To stope the bottom of the 37 east, by two men, at 3l. 10s. per fathom; the lode will yield 4 cwts. of silver-lead per fathom. To drive the 26 south through the lode, by two men, at 7l. per fathom; we expect soon to get through the hard part of the lode, when we expect it will improve. The lode being driven through is yielding a little silver-lead. Since my last visit to the mine the progress has been very slow, this is attributed to improper ventilation; we have now fixed a new fan machine, which answers well, and I am pleased to say the men can now work more effectually. The dressing is being proceeded with, but in this department the hands are all inexperienced, therefore the progress is slower than it would be, but we hope to have a parcel dressed in a few days.

CWM DWYFOR.—Joseph Jewell, July 19: I am pleased to inform you that in blasting down the lode last night in the 20, driving west of Stewart's shaft, we have discovered lead ore, and have this morning drawn to surface some of the leadstuff, which looks very encouraging indeed. I am not yet in a position to state the size of the lead-bearing portion of the lode, neither shall I be for probably a week or ten days more, as I believe we have met with the slide in this level, and I intend to cut through it before I get the lode taken down. We have to drive this level about 15 ft. further west before we reach the winze which we are sinking in the bottom of the 10 on this lode; I shall to-morrow send you a few stones of lead ore from this level.—Caunter Branch: In the winze sinking below the 1 on this branch the men are desuing the lode, consequently there is no change to report; when last taken down this branch yielded 15 cwts. of lead ore per fathom.—Dressing: We have this week been crushing some of the leadstuff drawn from the winze—a very fair pile of wor k.

CWM ELAN (NEW).—W. Goldsworthy, July 14: The casing and dividing of the engine shaft from the 30 to the 40, in the bottom, will be finished to-day. I shall put men to drive east and west from the shaft on the course of the lode. We have intersected the western cross course in the 30 west, which has heaved the lode south. I have put the men to drive in that direction. The cross-course is carrying some small strings of lead ore. When we cut into the lode again I expect we shall meet with good results. The stope in the back of this level is worth 9 cwts lead and 20 cwts. blende per fm. No. 1 stope in the same level east will produce 20 cwts. of lead ore per fm. No. 2 stope is suspended for the time, and the men are sinking the winze under the 2; the lode here will produce 25 cwts. of lead ore per fathom. No. 1 stope in the 30 east, on the south lode, is worth 8 cwts. of lead and 8 cwts. of blende ores per fathom. No. 2 stope is worth 7 cwts. of lead and 10 cwts. of blende ores per fathom. No lode has been taken down in No. 2 stope this week. We have 8 tons of lead ore cleaned in the bin. All other operations are going on regularly.

CWMYSTWITH.—July 18: Michell's levels east and west of the cross cut, on Michell's lode, are both still poor. The stope in the back of the same level is still worth 12 cwts. of lead ore per fathom. In Michell's cross-cut north the ground continues stiff for exploring. The lode in the 12 east has not yet been taken down There are three stopes at work in the back of Michell's level, worth 10 cwts. of lead ore per fathom. In Gill's upper level east, on the new lode, the lode is worth 10 cwts. of lead ore and 1 ton of blende per fathom. In stripping down the north side, in Gill's upper level, the lode is worth, on an average, 10 cwts. of lead ore and 1 ton of blende to the fathom. The stope in the back of Level Fawr, on the copper lode, is worth 12 cwts. of lead ore per cubic fathom. The stope in the back of the 24, on the Kingside lode and branches, is worth 15 cwts. of lead ore per cubic fathom. The stope in the back of Kingside adit level is worth 8 cwts of lead ore per cubic fathom. We are working the old flats over the 30 at Pugh's shaft, and are getting stuff that will give a small profit. Our tributers are getting fair wages. The new machinery erecting on the dressing floors is being pushed on as fast as possible.

D'ERESBY MOUNTAIN.—Wm. Bennetts, July 18: The ground in No. 3 adit level continues much the same as last reported. In No. 4 level the lode is still looking well, and worth 15 cwts. of lead per fathom.

DE BROKE.—J. Phillips, July 18: We have commenced driving the 45, west of Wilson's shaft. The lode is about 4 ft. in width, containing a large proportion of crystallised quartz, and occasional good deposits of lead ore, mixed with copper ore and blende. The lode in the 45 east is producing good stones of solid ore, and is improving. In the 35 east a rise has been commenced towards the winze from the 25. It is going up in a portion only of the lode, containing strings of lead ore. The stope in the roof of the 35 east is worth 8l. per fathom, and that to the west 16l. per fathom. The stope at the 25, east of rise, is worth 25l. per fathom. The stope west of winze, under adit, is suspended for the time. The tributers at Tygwyn are raising some very good ore, and working steadily. Since last report good speed has been made in dressing, and I intend to sample 20 tons lead ore on Friday or Saturday.

DEVON GREAT CONSOLS.—July 20: Wheal Josiah: The lode in Richards, engine-shaft is 3 ft. wide, consisting of capel, quartz, mundic, and spots of copper ore, and good progress is being made in sinking.—Wheal Emma: New Shaft, New South Lode: In the new shaft sinking below the 175, which is down 6½ fms; the portion of the lode carried is worth 5 tons of ore, or 15l. per fathom In the 175 east the part of the lode carried (5 ft.) is worth 3 tons, or 10l. per fathom In the 175 west the lode is large, and showing improvement, being now worth 4 tons of ore, or 12l. per fathom. In the 160 east the lode continues a good course of ore worth 8 tons, or 40l. per fathom. Gorrell's winze, which has been sunk in a good lode, is down 13½ ft. below the 160 east, and the present bottom is worth 6 tons, or 20l. per fathom. In Toy's winze, in the bottom of the 145 east, now down 6 fms, in a productive lode, the lode is worth 4 tons, or 12l. per fathom. The cross-cut at the 145 east, which is being driven for the purpose of communicating with Bickle's winze, in the bottom of the 130, is being driven with favourable progress. In the 115 east the lode is of good size (from 4 to 5 ft. wide), and is yielding small quantities of copper and mundic ores. Our sale on the 19th inst. (924 tons) realised 3686l.

DUBBY SYKE.—W. Tallentire, July 13: Dubby Syke Level: We have driven south beyond the small vein that we cut last week about 6 ft.; we are intersecting sparry backs; the beds slightly dip as we drive forward. We get nice pieces of lead ore from the north and south string which we are driving on.—Shooting Box Level: We are progressing satisfactorily towards the north vein. I expect it will be within 9 fms. of the vein we have last been driving in; the ground will not be hard—part hazel, plate, &c.

EAST DARREN.—July 17: The 130, east of Skinner's shaft, is yielding saving work for dressing. The lode in the 80, east of cross-cut, is 5 ft. wide, and has fallen off in value, now yielding 10 cwts. of lead ore per fathom. In the 80, west of cross cut on the south lode, the lode is 6 ft wide, and looking promising; now yielding 15 cwts. of ore per fathom. The lode in the drift west of the pitch over the 116 is 6 ft. wide, and hard for exploring; yielding 12 cwts. of lead ore per fathom. A stope over this level is yielding 10 cwts. of lead ore per fathom. A stope under the same level is yielding 10 cwts. of lead ore per fathom. The stope over the 80 will yield 1½ ton of lead ore per fathom In the cross-cut south at the 80 the ground is easier for exploring, and we expect to intersect the lode in a few days. In the cross-cut south at the 68 the ground is favourable for explorin g, and we consider we have 7 fms. further to drive to reach the south lode. We have three pitches at work, producing on an average 9 cwts. of lead ore per fathom. Since Friday last we have had very heavy floods of rain, and great quantities of water have fallen down from the surface—more than the launders in the adit level would carry—which has gone to the bottom and filled the 130 at Skinner's shaft, and we have put the men to repair the adit level, which requires timbering and making secure at several places. The tribute pitches throughout the mine have become very poor, and are now reduced to three in number, and we are at present endeavouring to lay open the south lode as quickly as possible, which, if it continues to prove as productive as driven through, we hope to raise our estimated quantity of 50 tons of ore for the two months.

EAST VAN.—W. Williams, July 17: Tempest shaft is down 15 fms., or deep enough for the 40 below the adit, but the men have to sink 1 fm. more for loom. The 25 west has improved. We have crossed 7 ft. through a very nice lode, producing good stones of ore, and lead to be seen in the present end. No other change worth noticing.

EAST WHEAL LOVELL.—Richard Quentrall, July 18: Fatwork: We are driving the 100 west at 14l. per fathom, lode small. The stope in the bottom of this level is opening out very well, the lode being worth fully 30l. per fathom; stoping at 8l. The 17, east of cross-cut north, has somewhat improved, and is now producing a little tin. We have communicated the shaft with the 17 west, and the men are now cutting plat. This having given us good ventilation, we have resumed the driving of the cross cut north, at 5l. per fathom, and are expecting shortly to reach the other lode.—Tregonebris: The lode in the 10 west is worth 5l. per fathom; driving at 14l. The lode in the adit end west is small, containing a little tin; driving at 8l. per fathom.

GAWTON COPPER.—George Rowe, George Rowe, jun., July 14: The lode in the rise in the back of the 132 east is worth 10l. per fathom, which has been suspended for the past few days, and the men placed to timber and secure the 117 east, which we purpose to resume at the earliest convenience. The lode in the stopes below the 117 is worth 11l. per fathom, and is pretty near worked through to the level. The lode in the 105, west of cross-cut, is without change; worth 30l. per fathom. The drivage east at the same level is worth 8l. per fathom. The ground in both the cross-cuts going south at the 95 and 82 is without change during the past week. The tribute department is showing improvement, and the men are getting fair wages in their respective tributes.

GLENROY.—R. Rowe, July 16: Settings for July: Shaftmen to fix present lift in cistern at bottom of shaft below the 65, drop new lift, and then to resume sinking, when price for a further 10 fms. will be fixed. The above pump arrangements will occupy the men about 10 days; by four men and four labourers. The winze below the 40 by two men and two labourers, at 7l. per fathom. The stope in the roof of the 40 south by one man and one labourer, at 3l. 15s. per fathom. The 25 cross-cut by one man and one labourer, at 11l. per fathom. The adit level north to cross-cut through the lode east by two men and two labourers, at 6l. 10s. per fathom.

— R. Rowe, July 18: The shaft is sunk 3 fms. below the 65, and at that point we have now to fix cistern for the standing-lift, and resume sinking with a fresh one; the lode continues to be about 8 ft. wide, and without change in character. The lode in the winze below the 40 is about 2 ft. wide, and yielding some fair stuff for blende. The stope in the roof and going south in whole ground is improved, and at present yielding some good blende. In the 25 cross-cut we have of late been intersecting branches and strings highly mineralised, but so far no regular lode. In the adit level driving north the lode is so wide that before driving any further ahead I have determined to cross-cut on either side to prove the whole of the lode.

GOGINAN AND LEVEL NEWYDD.—July 17: In the past month the 130, east of western shaft, has been extended 3 fms.; lode here large, worth at present 12 to 14 cwts. of ore per fathom. The rise over the 130, west of western shaft, has been put up 2 fms. 1 ft. 6 in.; lode producing 14 to 16 cwts. of ore per fathom. The rise over the 120 fm. level, 55 fms. west of Bryn Pica shaft, has been carried up 2½ fathoms in a lode worth ½ ton of ore per fathom; this point will be holed to the winze sunk below the 110 in a few days, when we shall set on another stope over the 120. The winze below the 120, 70 fms. west of Bryn Pica shaft, has been sunk 2 fms. in a lode containing good strings of lead ore, but the main part is standing to the north, which will be cut into and proved when the winze is down a little deeper. In the stope over the 120, 45 fms. west of Bryn Pica shaft, the lode is worth 12 cwts. of ore per fathom. In the stope over the same level, west of western shaft, the lode will produce 18 cwts of ore per fathom. The 100, east of Bryn Pica shaft, has been extended 3 fms. in a lode 3 to 4 ft. wide, which showed spots of ore at times, but nothing of any importance. The four tribute pitches are producing on an average 10 cwts. of ore per fathom. Surface operations are being pushed on as speedily as possible, and we hope to set the new jig and two round buddles, &c., to work next week. The stone-breaker is put to work, and answers well. Samples of 40 tons of ore will be sent out to-day, for sale on the 30th inst. We have had very heavy rains here since Saturday last, and the reservoirs are full of water.

GREAT DYLIFFE.—Evan Evans, July 17: Dyliffe Lode: The 132 is set to drive east, by six men, at 6l. per fathom; the lode at this end at present is not so good as it has been. We expect a good bunch of ore in about 3 to 4 fms. The stope in the back of the 132 east is set to four men, at 3l. 17s. 6d. per fathom; worth about 11l. per fathom. The stope in back of the 132 west is set to six men, 3l. 15s. per fathom; worth about 13l. per fathom. A stope in the back of the 120 east is set to six men, at 3l. 10s. per fathom; worth about 11l. per fathom. At the bottom of the 45 east we are sinking a winze, by six men, at 6l. 10s. per fm., to prove a good bunch of ore where this level was driven through it. It is now down about 5 fms., and the ores still continues good, and is worth about 16l. per fathom. The winze in bottom of the 25, west of old shaft, is set to six men, at 7l. per fathom; worth about 12l. per fathom.—Llechweddelu Lode: The stopes at the 105 east are worked by different parties, numbering 14 men, at 3l. per fathom; value of stope No 1 about 20l. per fathom, and Nos 2 and 3 about 12l. per fathom each. The stope in back of the 95 east is worked by four men, at 3l. per fathom; worth about 13l. per fathom. At the cross cut in the 105, west to the Engaingaled lode, good progress has been made during the last fortnight. There is a strong lode in this cross-cut, with a good string of copper and some lead in it.—Engaingaled Lode: A stope in the back of the 45, west of cross-cut, is set to four men, at 4l. 10s. per fathom, and is worth about 12l. per fathom. There are set on tribute 15 pitches to 58 men, as follows:—four men at 4l. 10s. per ton, six men 4l. 16s., six men at 5l., four men at 5l. 10s.; six men at 6l., 16 men at 6l. 10s., four men at 6l. 15s.; four men at 7l., and eight men at 7. 10s per ton.

— Evan Evans, July 19: We have sold 80 tons of lead ore to-day to Messrs. Sheldon, Bush, and Co., at 12l. 9s. 6d. per ton, realising 998l.

GREAT LAXEY.—W. H. Rowe, July 12: Deep Mine: In the 235 end, driving south of engine-shaft, the lode is chiefly composed of hard spar of great strength, but as yet is without ore to value. At the Welsh shaft, below the 235, the cutting out ground for lodge is nearly completed, and shaft down over 3 fms.; this and the south driving are necessarily hindered just now by the work in hand about the big wheel. The 235 end, north of Welsh shaft, is worth 25l. per fathom. The same level, north of winze, is worth 5l. per fathom. The 221 end north is worth 16l. per fathom. The branch alluded to in last report appears now to form a curve, and to be falling back again into the main part. The 210, south of No. 2 cross-cut, continues to open out good ore ground, worth at present 21l. per fathom. In driving south from No. 1 cross-cut the lode has improved, worth 55l. per fathom A new stope in roof is worth 40l. per fathom. We have suspended the driving of this level northwards for a short time till the new stope and two others in the sole of the 200 level are a little further advanced. We have also temporarily suspended the driving of the 200 north, and started a winze to communicate with the 215, driving south from Dumbell's, where the lode is worth 30l. per fathom.—Dumbell's: The 215, driving north, is worth 20l. per fathom. In the 185 we are cross cutting to the west or footwall, where, from careful dialling, we expect to cut the same good branch as there is now in the 170, which is about the same value as last reported. This part of the mine is now engaging our very serious attention with reference to a cross-cut of considerable extent, and we have great hopes of making a discovery of something new from the adit downward.—Old Bucks: A winze sinking a few fathoms below the 145, south of engine shaft, is worth 45l. per fm.; ground whole to the 165. A rise and stope over this for a short length is worth 20l. per fathom. A stope in the roof of the 120 south is worth 20l. per fathom. Another in roof of the 100 south is worth 15l. per fathom. A rise and stope in roof of the 60 is worth 30l. per fathom. We are making a preliminary stope along the roof of 110 between the Welsh and Dumbell's shafts before deciding on the exact spot to rise. The appearances so far are very encouraging. A driving and heading southwards above the day level at Dumbell's shaft are worth 75l. per fathom The cross cut below the dressing floors has not yet struck anything decided, but the indications are as encouraging as ever.

GREEN HURTH.—W. Vipond, July 16: The end on No. 3 cross vein going south is easy for driving, the beds still going up a little, but not quite so fast as they were; this end is now under the limestone on one cheek of the vein, and will apparently soon be under it on both—it is yielding no ore at present. The stope on No. 2 cross vein has improved for ore, and is now producing 1 ton per fathom. The new east branch is worth 1½ ton of ore per fathom, and looking well for continuing. The working on the west side of No. 1 cross vein is yielding good ore this week—fully 16 cwts. per fathom. In the two ends driving on the branches on the west side of No. 1 cross vein the one going north is about paying cost, with better ore in the roof above, and the one going south is producing fully 2 tons of ore per fathom, with splendid ore going down in the bottom, and leaving good ore also in the roof above. In the north part of the mine we have commenced to work in the bottom of the level near Fire-away cross cut, and find the ore going down below worth 16 cwts. per fathom, with the ground easy for working. There is nothing new to report from the cross-cut south from the adit level. Altogether the mine is looking better, and yielding more ore than it has done for some time past. We have delivered this week to Messrs. Walton and Co. per rail a wagon of ore containing 7 tons 4 cwts., and they have also got from the mine with their own carts 1 ton 12 cwts of ore.

GUNNISLAKE (Clitters).—William Skewis, J. C. Seccombe, July 18: The lode in the engine-shaft is worth 16l. per fathom, with every appearance of an early improvement. All the other points are looking just the same, no change having taken place since the meeting.

HARWOOD.—W. Tallentire, July 6: We have driven north and south about 3 fms. on the east branch, and have cut out turn-room for both workings. The vein in both ends is looking better, and produces more lead ore; it is drift width, composed of rider, with more sampy veinstuff in it, and clay in the latter. We find a good deal of solid ore, and the ridered part of the vein is more brangled. We have got some nice house this week.

— July 13: No change to report since last week.

HINGSTON DOWN CONSOLS.—T. Richards, July 19: In Bailey's shaft the sinking progresses satisfactorily.—Bailey's Shaft: In the 160, west of Nicholl's winze, the lode is worth 5 tons of ore, or 15l. per fathom. The winze in bottom of the 160 continues worth 8 tons, or 32l. per fathom. In the stope in the back of the 160 west the lode is worth 6 tons, or 24l. per fathom. In the 150, west on the south part of the lode, the lode is worth 3 tons, or 12l. per fathom. In the stope in the back of the 150 west the lode is worth 5 tons, or 15l. per fathom. In the 140 west the lode is producing rich stones of ore. The stope in the back of the 140, west of Chynoweth's rise, is worth 5 tons, or 20l. per fathom. In the 120, west on the south part of the lode, the cutting of winze, plat, &c., is completed, and sinking commenced. The 110 west is producing rich stones of ore, and is promising. The tribute pitches continue to yield fair returns.

HOLMBUSH.—H. Bennetts, July 19: We are continuing to clear the engine-shaft below the 80 as fast as possible, and are now down 5 fms. below that point. The following is our setting report:—The 60 to drive west of engine shaft by four men, at 7l. per fathom; this end has greatly improved for mundic and copper during the last 3 ft. driving, and with a large quantity of water issuing from the end, the country also has greatly changed, and there is every indication of soon coming on something good. As I have before stated, this is a very important point, as the end is going west in whole ground standing 90 fms. high. The 60 to drive south on the lead lode by four men, at 3l. per fm.; the lode is kindly, with spots of lead and sulphur-mundic. The 60 to drive east of Lord's shaft by four men, at 8l. 10s. per fathom: the lode in this end has still an improving appearance for both copper and mundic, with a large quantity of water issuing from the lode; this end is in whole ground, and approaching the intersection of the granite and killas. We have commenced to cut a trip plat at the 60 at Lord's shaft by six men, and as soon as completed we shall begin to clear the shaft below that level. Four stopes in the back of the 40, east of Miller's shaft, by 18 men, worth 18l. per fathom each on an average. A stope in the back of the 50, on the Flap Jack lode, by six men, worth 22l. per fathom. A stope in the bottom of the 50, on the Flap Jack lode, by four men, worth 20l. per fathom. A stope in the back of the 70, on the Flap Jack lode, by four men, worth 18l. per fathom. As Miller's shaft is now cleared from the 70 to the 80; we shall commence to stope the back of the 70 at once, and the back of the 80 as soon as we have made the necessary preparations. We have been compelled to take out some of the hands from the various tutwork bargains for the time being, in order to push forward the excavation of wheel pit and lobby for new water-wheel, as we are anxious to get this work completed. We have also required some extra hands to lay out dressing floors, build up cibles, &c., at Lord's shaft, for the purpose of receiving the mundic and copper ore that will be hauled at that shaft. I may here remark that I consider the prospects of the mine were never equal to the present, seeing that we have the 70 and 80 fm. levels dry, a large quantity of ground laid open available for stoping, and a very promising lode in the 60 fathom level end, east of Lord's shaft, in virgin ground. The 40, to drive east of Miller's shaft, by six men, at 5l. per fathom; the lode is worth 18l. per fathom; we are daily expecting this level to Lord's shaft. The 20 to drive east of Bennett's shaft, on the Flap Jack lode, by two men, at 4l. per fathom; the lode is large, and containing stones of mundic, but not sufficient to value. A large quantity of water is issuing from the end.—Stoping: A stope in the bottom of the 60, west of Miller's shaft, by two men, worth 13l. per fathom. Nos. 1 and 2 stopes in the back of the 60, west of Miller's shaft, worked by 11 men, worth 18l. per fathom each. Nos. 1, 2, 3, and 4 stopes, in the back of the 60, east of Miller's shaft, worked by 18 men, worth each 22l. per fathom. Nos. 5, 6, and 7 stopes in the back of the 60, east of Miller's shaft, by 16 men, worth 25l. per fathom each. Nos. 1 and 2 stopes in the back of the 60, west of Lord's shaft, by 12 men, worth on an average 22l. per fathom. Nos. 3 and 4 stopes in the back of the 60, west of Lord's shaft, by 10 men, worth each 20l. per fathom. Two stopes in the back of the 50, west of Miller's shaft, by four men, worth each 35l. per fm. A stope in the bottom of the 40, east of Miller's shaft, by four men, worth 22l. per fathom. All surface operations are progressing satisfactorily, and the machinery is in good working order.

KINGSTON CONSOLS.—J. Chynoweth, July 19: Fair progress has been made in driving west in the 40; the lode continues to be unproductive. The lode in the 18 east is large, producing saving work for lead and blende. No. 4 winze, sinking in bottom of the 18, the lode is 3 ft. wide, with a beautiful underlie about 18 in. per fathom—well defined, worth 7 tons of blende and 10 cwts. of lead per fathom for length of winze. Five stopes working in back of the 18 are producing their former value for lead and blende. The stope on the north and south lode is worth 8 cwts. of lead per fathom. We weighed off lead and blende to-day. All came over computation. All the machinery giving good satisfaction.

LADYWELL.—Arthur Waters, July 19: The mine generally is looking fairly well, and our sampling next week will be 30 tons for the month. The new south engine-shaft is again suspended on account of the water, the result of heavy rains.

LEADHILLS.—Arthur Waters, July 19: The mine is, on the whole, looking very well, and we are opening out good reserves of ore. My full report and setting list next week. Our returns for June were 325 tons.

LLAN GAN.—Capt. Wasley, July 19: Engine-Shaft: This shaft is now down about 19 fms., and the men are progressing with the sinking satisfactorily.—Wright's Lode: The winze herein is down 7 fms. below the level—the lode continues good. We are stoping the west end, and it is looking very well.—Old Engine-Shaft: The lode in the winze still keeps good, the shoot of lead is dipping west. All the other work is going on well.

LLANIDLOES.—John Kitto, July 13: We have made very good progress in sinking the engine-shaft during the past month, and by the middle of next week shall be down for the 84 fm. level, when we shall immediately commence to cut lodge and drive out eastward to prove the lode. The stopes above the 74 fm. level are looking pretty well, and are let on tribute at 6l. per ton. Since my last report we have sold to the St. Helens Smelting Company 20 tons of lead ore at 12l. per ton, and the same has already been delivered. I have at present nothing else new to refer to.

MARKE VALLEY.—W. George, James Stenlake, July 19: We have driven through what appears to be the main part of the lode in the 148 cross-cut south, which is 3 ft. wide, and worth 1 ton of copper ore per fathom, and have commenced to drive west on its course. No other change since the meeting.

MELLANEAR.—Capt. Gilbert, July 18: The lode in the 50, west of the skip-shaft, is now a little smaller than it was last week; it is about 18 in. wide, but will still produce 1 ton of copper ore per fathom. The 67, west of the skip-shaft, was communicated with the 70, east of Gundry's, this morning; after the men have squared their ground we shall put them for the remainder of the week to take down the south part of the lode now standing in the side of the level. The lode in the No. 2 rise in the back of the 67 is not looking quite so well, now worth 3 tons of ore per fathom; this rise is up about 9 fms., and has gone through a good lode for the whole distance. The lode in No. 3 rise in the back of this level has improved, and is worth 6 tons of ore per fathom. The lode in the 90, west of the skip-shaft, is still 4 ft. wide, and worth 3 tons of ore per fathom. The ground in Gundry's shaft is without change to notice, and our progress has been very good indeed; the men will sink more this month than in any other month since we started the shaft. The lode in the 80, west of Gundry's shaft, is getting very sparry, and is worth 1½ ton of ore per fathom. The rise in the back of the 70, east of shaft, is worth 3½ tons of ore per fathom. The lode in the 70, west of shaft, is worth 4 tons of ore per fathom. The lode in the 60 east of shaft, is worth 3 tons of ore per fathom, and the 60 west is still worth 4 tons per fathom, and the ground is favourable for driving. Our carpenters are getting on as fast as possible with our surface work. We have the centrifugal pump on the mine, and also nearly all the castings and shafting for driving the new dressing machinery. We sampled yesterday (computed) 254 tons of copper ore, which is an increase of 70 tons on our last small sampling.

MONYDD GORDDU.—James G. Green, July 18: The cross-cut south from adit, at a point 4 fms. east of winze, has intersected the south lode, and the men put to drive west on the course of same; worth for lead 15l. per fathom. The stope at the end of the 12, on the main lode, east from engine cross-cut, is worth 25l. per fathom. This bargain will be completed in the course of a week, and driving will then be commenced at the 12 east end on a very promising lode. The 12 west has just passed through a vugh or cavity of no value, but to-day the lode is re-forming, and is worth 15l. per fathom. All other points same as last reported Our crusher is now thoroughly repaired, and set true and lined with water-wheel, and is doing excellent work. Dressing going on with full force, with a good supply of water. Your instructions shall have my attention.

NORTH LAXEY.—R. Rowe, July 13: Setting Report for July: The north shaft to sink below the 136, by four miners and four labourers, at 30l. per fathom. The 121 fm. level stope by four men and four labourers—driving at 11l. per fm. and stoping at 5l. The 70 cross-cut to open on new vein, by three men and three labourers, at 6l. per fathom. The 60 sole to stope by four miners and four labourers, at 4l. per fathom. The 60 roof by six men and six labourers, at 5l. per fathom. The 50 roof by three men and three labourers, at 4l. per fathom. The 40 sole by two miners and two labourers, at 3l. 10s. per fathom. The 40 cross cut, on branch, by two mon and two labourers, at 10l. per fathom.

— R. Rowe, July 14: We measured and let the usual monthly bargains yesterday, and I send herewith the setting report. The engine shaft is now sunk 9 fms. 1 ft. below the 136 fm. level; the lode at the deepest point is 3 feet wide, of an open and loose nature, and yielding more ore than we have seen during the sinking. Judging from present appearances no one could doubt of our being close to a large deposit of ore. During the month the sinking was delayed for nearly 10 days from a breakage of one of the main rods, but all has been made right, and the shaft will continue to be pushed down with all speed for a new level; this will be reached by the end of September. The stope in the sole of the 121 fm. level has improved; mainly in showing an increased length of ore ground to what we had above, and is still going into whole ground northwards—worth 1 ton per fathom. A stope in the roof of the 110 is worth ⅝ ton per fathom. In the 70 we have intersected a lode about 18 inches wide, containing lead and blende, but it is by no means certain that this is the lode turning out so well for us in the 60, in the roof of which the stopes are worth from 1½ to 2 tons per fathom. A stope in the sole of the 60 near the south shaft is worth 15 cwts. to the fathom, and two in the 50 are worth from 12 to 15 cwts. per fathom. In the 40 driving north of the south shaft we have been opening on a lode producing some saving stuff; presently the end came up to a cross branch, about 2 inches wide, almost solid lead. We have turned the driving on its course eastward, and are in 9 ft.; the branch is increasing in size and richness, and I am of opinion that it will lead to a parallel lode—possibly in connection with the east lode now being worked in the roof of the 60. It is a point of much importance, and will not take long to test.

— R. Rowe, July 18: Up to this evening there is not much change in the mine since my report of Saturday last. The shaftmen have made a further sink, and the lode looks very well indeed. Some nice lead is being broken from it to-day. We shall sample on Tuesday 5 tons of lead.

OLD TREBURGETT.—W. Hancock, W. T. Bryant, July 18: In the 102, south of the engine shaft, driving on the east part of the lode has improved, worth 9l. per fathom. In the 90 south the lode is worth about 8l. per fathom. The stope in the back is worth 16l. per fathom. No. 2 winze, under the level sunk on the west part of lode, is down about 10 fms., and suspended until the 102 end is forked. No. 3 winze is worth about 10l. per fathom; this is about 25 fms. in advance of the former end, and about 4 fms. in advance of the 102 end. The 80 No. 1 stope in bottom is worth about 14l. per fathom. No. 2 ditto about 8l. per fathom. No. 1 stope in back is worth about 16l. per fathom. No. 2 ditto is set to two men on tribute. The rise in back of the 60, against Masey's shaft, is worth 7l. per fm.—Masey's Shaft: There is a little more ground to square down, when sinking will be resumed below the 40; lode worth about 12l per fathom; down 5 fms. below the level; we have at present nine men here. The stope north of the shaft is worth about 8l. per fathom. In the 40 south in cross-cut, towards east part, we have intersected a branch about 1 ft. wide, producing good stones of lead; there is still another part ahead; when intersected we shall be able to ascertain the best and promising part to drive on. We have 16 men on tribute in different parts of the mine—two at 9l. per ton, four at 12l. per ton, eight at 18l. per ton, two at 17l. per ton Future prospects of the mine good.

PARYS MOUNTAIN.—T. Mitchell, July 18: The 90 south has advanced about 6 ft. since passing through the branch of ore last met with; the ground is firm, and rather hard for cutting. The trial at the 80, east of cross-course, has not yet reached the ore bearing ground similar to that seen in the level above. The ground in the trial cross cut at the 30 is easy for driving, and good stones of ore are often met with in the flookan joint going forward with the end; this is a promising place, and we hope to open up some good ground in this direction. The ore at out this place is generally of good quality. The various stoping points are yielding much as usual, excepting the stope at the 65 east, which has recently fallen off in value. The tribute pitches are, on the whole, looking much as usual. Our sampling this time will consist of two lots of copper ore (about 250 tons).

PATELEY BRIDGE.—C. Williams, July 19: I have no change to advise you of in any part of the mine this week except in the 3 east, on Rake vein. We have a course of ore in the back of this level, 3 ft. wide, of nearly solid metal. The vein in the end also maintains its former value. Dressing of ore is progressing very well.

PENHALLS.—S. Bennetts, P. Vian, July 14: That part of the lode on which the 70 east is being driven is producing low quality tinstuff. The principal part, where being opened out in the rise over this end, is worth 12l. per fathom. This rise is now holed to the 60 east, on the downright lode. The 60 east end is looking well, worth 12l. to 14l. per fathom. The 55 east is worth 8l. per fathom, and the same level west 5l. per fathom. The 50 east is at present unproductive. In the 50 north cross-cut a large gossan has been intersected, but as yet no lode. The 48 west is worth 10l. per fathom. In the various other points of operation there is not much change to notice.

PENSTRUTHAL.—William Teague, July 14: Owing to the altered mode of working, we shall not sell so much tin on Thursday next by about one-half. The cost sheet for July will not exceed 250l., when our sales for copper and tin will be fully 200l. The new copper lode in the 45 is still producing good copper ore, but the lode is not quite so large. The cross-cuts at the 34 and 58 will intersect this lode in the course of the coming month, when there is every chance of meeting with copper ore. The lode in the 72, east of Highburrow, is producing good stones of tin, a most promising lode, and it puzzles me because it does not further improve, as the indications are so much in favour of an improvement. We have commenced the sinking of Highburrow shaft under the 72, fixed and made everything complete for going 20 fms. below the present bottom. All other places are without alteration. I still have hope that better results are before us, and hope ere long to report more favourably.

PLYNLIMMON.—J. Garland, July 18: With the exception of an improvement in the lode in Herbert's winze, sinking below the 24, which now produces 15 cwts. of lead ore per fathom, there is no change in any of the underground operations since my last. We have a plentiful supply of water, and drawing and dressing are being kept on with regularity, all well Samples of 20 tons of lead ore will be issued on Tuesday next. The machinery throughout is in fair working order.

PRINCE OF WALES.—J. Andrews, July 18: On Saturday last the stope in the bottom of the 55, west of cross-course, was set to six men, at 85s. per fathom; the lode in the stope is 4 ft. wide, worth 15l. per fathom. Two pitches were set

in the back of the 55 west, to two men in each pitch, at 12s. and 13s. in 1l., also a pitch in the back of the 45 west, to two men, at 12s. in 1l.

RED ROCK.—J. Kitto, July 13: There has no important change taken place in any part of the mine since the date of my last report, consequently I have nothing particularly new to mention. The development of the mine is progressing satisfactorily, and our prospects gradually improve. We have cleared and repaired the 10 fm. level east of the eastern shaft, and have commenced to drive the same in a promising lode, which contains both lead and blende ores, but so far, is not rich. We have also cleared the shallow adit level in the western hill, where we find the lode very large, and of a kindly appearance, but we have not yet resumed the driving of this level. We shall fix the new lift of pumps in the engine-shaft next week, and after this is done I hope to be able to make good progress in sinking the same below the 60. We are getting on as fast as possible with the new dressing machinery, and I hope to have it ready to work in a month from this date.

ROMAN GRAVELS.—A. Waters, July 19.—The mine throughout is quite up to the valuations given in my general report. Our sampling to day is 175 tons, for sale next week.

SOUTH CONDURROW.—Wm. Rich, W. Williams, Hy. Abraham, July 17: The West Basset lode in the 30, going towards Plantation shaft, is increasing in size, and carries a little tin. The 40, west of engine-shaft, is worth 6l. per fathom. The 40 end east is worth 15l. per fathom. The 50 east is worth 8l. per fathom. The 50 west is worth 10l. per fathom. The rise in the back of the 60 west is worth 12l. per fathom. The 60 end west is suspended for the time, to put up a rise on the West Basset lode. The 70 end west is worth 10l. per fathom; we have some rich grey copper ore in this end. The rise in the back of the 70 is worth 10l. per fathom. The 80 end east is worth 7l. per fathom. The 93 end west is worth 8l. per fathom.

SOUTH CWMYSTWITH.—John Kitto, July 13: I am glad to be able to inform you that very good progress has been made during the past month in every part of the mine, and our prospects continue as satisfactory as hitherto; but there is no special feature or change in any part of our underground workings that I need particularly to refer. We have commenced to sink a winze since the date of my last report between the intermediate and No. 2 adit levels, but this having been started in the south side to facilitate progress, will not touch the main ore bearing part of the lode until it has been sunk two or three fathoms deeper. The masons have commenced to build the pit for the crushing-mill wheel, and, should we be favoured with a continuance of fine weather, will soon have it up, when we shall immediately commence to erect the dressing machinery, the whole of which is in course of making, and a great part already on the mine

SOUTH TOLCARNE.—Wm. Rich, W. Humbly, July 18: We have sent down cistern and fixed drawing-lift at the gossan shaft, and shall now send down pumps to drain the mine to bottom. The 50 cross-cut, north of engine shaft, is being urged on by six men to cut the tin lode as quickly as possible. Fraser's lode, in the 50 east, is yielding good stones of ore. We are still sinking the trial shaft near the eastern boundary with the view to intersect South Condurrow tin lode about 10 or 12 fms. below the surface.

ST. HARMON.—John Kitto, July 13: There has been no change of much importance during the past month in any part of the mine. The lode both in the 67 east and 35 west looks very kindly, and we are daily expecting a further improvement. In 48 fm. level cross-cut, driving south the ground has changed, and is letting out water rather freely. It would appear from present indications that we are getting near a lode; but should this be so, it cannot be one of the lodes for which this cross-cut was started, as the nearest of those must still be many fathoms in advance of the end; but it is quite possible there may be another lode between that has not yet been discovered. I have nothing new elsewhere to refer to. The machinery is in good order and doing well, and all operations, both underground and at surface, are regularly progressing.

ST. PATRICK.—W. Francis, July 18: I am glad to say we have a great improvement in the 120 yard cross-cut north, having broken stones of ore from ¾ lb. to 2 lbs. weight. I think we are now close upon the junction of an east and west vein with the cross-course, and that it will prove highly productive; besides this there are several small strings of lead ore in the boulders found in the cross-course from ¾ in. to ½ in. wide solid ore), and good faces of ore on their surface. The driving west on the vein at the sump continues without material change, but the strings of spar are getting wider. The 60 yards cross cut in the clert is easy for driving, and very congenial for ore.

TALLYBONT.—Thos. Glanville, July 19: No. 1 Lode: Deep Adit Level: My predictions concerning this part of the mine are in a fair way to be verified, as we have to-day cut into a lode running north and south, and containing a fine branch of ore; but as we have not fully uncovered it, it is impossible to give you any details concerning it.—No. 2 Lode: In the 17 fm. level east there has been no change since writing you last, the lode still being composed of spar, carbonate of lime, and good stones of lead. It is stated that this lode shows a splendid appearance in the old engine-shaft east of this point; and taking this statement, the proximity of this end with the shaft, and the present aspect of the cross-cut north (which is full of leaders of rich lead) into consideration, I fully believe in a short time we shall open up a large quantity of paying ore ground.

YEESDALE.—T. Watson, July 13: North End Stope: We continue to stope the vein here, worth 16 cwts. of lead ore to the fathom.—North End Cross-cut: The men are now driving south on the vein on slate and grey beds; ground much broken and confused; vein worth 6 cwts. of lead ore to the fathom. We have two men now working in this vein above this end; they have a vein worth 8 or 10 cwts. of lead ore to the fathom.—Hopkins's Level: We have an improvement in our vein here; 12 wagons of bouss were brought to the dressing-floors from it yesterday; the vein is now 3 ft. wide, ground softer, and better to drive.—Surface Work: We will finish carting machinery from Westmoreland Mine this week; one of the buddles will soon be ready for work. I expect that we will have a truck of lead ore ready to send away next week.

THE CAMBRIAN MINES.—EGGAR FRAITH.—Thomas Glanville, July 19: The eastern shaft is now sunk 2 fms. 2 ft. below the 10, the value of which I am pleased to say increases with every foot we sink. It is composed of gossan, lead, and rich copper ores, and is worth at least 14l. per fathom. In consequence of the increased quantity of water issuing from the lode at this point, we have been obliged to fix a new bottom lift, which is now keeping the water in fork. In the winze sinking below the 10, and west of the shaft, the part of the lode being operated on is composed of carbonate of lime, intermixed with lead and copper ores; and at a slightly deeper point we shall, without doubt, meet with a continuation of the rich lode seen in the shaft.

EGGAR HIR.—Thos. Glanville: The new shaft is sunk from surface 8 fms. 9 in., and should there be no change in the ground we may confidently expect to open up communication between the shaft and level below in the course of another two weeks from this time. We are busily engaged in putting our dressing and crushing machinery in perfect order, and when this is effected we shall immediately commence dressing a parcel of ore for market. All our surface operations are progressing satisfactorily.

TOLGUS CONSOLS.—W. C. Vivian, July 19: We have in the last day or two opened into a better and more promising lode than we have before had in the 25 west, or any other point which we have explored in our western ground. The increase in the size of the most productive branch of the lode, and the fine rocks of copper and quartz which we have been blasting out from it has been most encouraging. This part of the lode, however, became compressed, and consequently the appearances were not so favourable; but I am glad to be able to report to-day that it is opening again, and has a rich vein of copper ore as a leader. It is also letting out a stream of water. The south branches of the lode, which also consist of copper ore and quartz, but are not so large as the north one, are apparently trading to form a junction with the north part in going a few feet further west.

TRELEIGH WOOD.—William Goldsworthy, July 18: The lode in the 56 fm. level west is worth for the part carrying 10l. per fathom. We are expecting an improvement here daily. The lode in the side and back of the 34 west is worth 15l. per fathom. We are opening out a good piece of ground here. The pitches continue to yield their usual quantity of tin.

TYN-Y-FRON.—E. Jones, July 17: We have continued the cross cut in the western level, mentioned in last report, 7 ft., the lode producing blende, spar, and a little copper ore, and upon ascertaining its width we shall be able to put a value upon it; at present we have no wall. In consequence of the flood of rain which fell on Saturday, Sunday, and Monday, raining day and night, we have been prevented working here, but hope to resume operations after to-morrow if the water continues to subside as it is now doing. With regard to the value of the north lode, I consider No. 1 stope will produce 3 tons of blende ore per fathom, and No. 2 stope 2½ to 3 tons of blende and about ¼ ton of lead ore per fathom. I hope you received the specimen of copper ore forwarded to you per post. We hope to have a nice pile of it for sale, as we are saving it for that purpose. We have not cleared any more of the eastern level since last reported; but we find the lode becomes richer for lead going east into the hill than we have seen it in the west. This may be caused by its gaining depth or cover, which is a favourable indication for increase of lead ore as depth is obtained.

VALE OF CONWAY.—J. Roberts, July 19: The east and west lodes are about 3 ft. wide, composed chiefly of carbonate of lime and quartz, and mixed throughout with lead; worth about ½ ton per fathom. The Rabbit lode is without any alteration; sometimes it is pinched rather small, and at other times it produces rocks of solid lead as much as anyone can lift.—Surface Work: The wheel-pit is completed, and to-day we have been setting the beams of the crusher-house, which will be completed next week if nothing unforeseen occurs. The crusher is completed at the foundry, and will be on the mine in a few days, when it will be erected forthwith.

VAUGHAN.—July 17: The deep level east has been driven during the past month 2½ fms. through a hard strong lode, containing spots of copper, but unproductive for lead. The cross-cut south at the 32 east has been driven about 9 ft. through a productive part of lode, yielding for the width 1¼ ton of lead ore per fathom; at this point we have commenced rising under the winze, sinking from the level above to effect a communication for ventilation, and laying open ground for stoping. The winze under the 20 is down 6½ fms.; the lode in the present bottom is a little improved, and worth 1½ ton of lead ore per fathom – this point is suspended in consequence of insufficient air, and increase of water, which we hope will be drained by the rise coming up from the level under. At surface we are now proceeding with the erection of crushing-mill and stone-breaker, which work will be completed as early as possible that we may commence erecting the Collom's jiggers, &c., which have been delivered on the mine.

WEST GOGINAN.—John Kitto, July 13: The engine-shaft will be down to the 48 by the end of next week, when we shall immediately commence to cut lodge and to cross cut north through the lode; very good progress has been made in the sinking. The 26 end driving west has much improved, and the lode is looking more kindly than it has for months past, but there is no change in the winze sinking below the 24. In the cross-cut driving north at the 36 we have intersected one or two joints containing small cubes of solid lead; this I consider a very favourable indication, and have little or no doubt that we shall find the main part of the lode standing off in that direction, but we may have 3 or 4 fms. further yet to drive to intersect the same.

WEST PATELEY BRIDGE.—David Williams, July 19: Good progress is being made in driving the 56, and I have no doubt the contracts will be completed this month. The lode is about 5 ft. wide, composed of the usual matrix for producing lead ore in paying quantities in this district. The rise in the back of level is 3 fms. high; lode 6 ft. wide, consisting of limespar, gossan, and lead ore, worth 12 cwts. per fathom. The Craven Cross shaft from surface is down 9 fms. No. 2 shaft is down between 3 and 4 fms. below the 10; lode improving as we get deeper, and is fully 2 ft. wide, filled with spar and lead ore, being good saving work for dressing. The vein in the level west of cross cut, north from shaft, is nipped at present. The new shaft upon Discovery lode, is down 8 fms.; lode 2 ft. wide, composed of gossan, and good branches of ore, worth 6 cwts. per fathom. In the level east from No. 1 shaft, the lode is 1 ft. wide, producing patches of lead ore.

WEST ROSKEAR.—H. Stephens, W. Bennetts, July 19: The ground continues hard in the 12 west, and consequently there is no change worthy of notice in the lode. The stopes in the back are looking very well; the air is somewhat better in the eastern level this week, and the tributers have been able to work more of their time.

WEST WHEAL TOLGUS.—July 18: In Taylor's shaft the ground is just the same as it has been; the shaft is down to about the depth for the 145 fm. level; next week we shall begin to cut ground for a plat. There has been nothing done in the 135 east since last week's report. The end men have been employed about other work. The lode in the 135 west is much the same as last reported; the men have been taking down the side, in order to open the end wider; the men are set to make the end 8 ft. wide, but they are not carrying all the lode; the part that is being driven on will yield 9 tons of ore per fathom. No alteration to notice in the stope in the back of the 135. The lode in the 125 west is about 1 ft. wide, yielding ¼ ton of ore per fathom. The lode in the 95 west is all the width of the end, with a little ore, but not enough to value.—Richards' Shaft: The lode in the 93 east is 6 ft. wide, but poor; we calculate on communicating this end with the 93 end west, from Taylor's, this week, but the ground has proved to be harder than we reckoned on; it will be done some time in next week. The lode in the 95 west is also large and poor. The lode in the rise in the back of the 85 west is yielding 2½ tons of ore per fathom. The lode in the 75 west is smaller than it has been, with less ore, now yielding ½ ton per fathom. The lode in the 65 west is small and poor. We sampled 356 tons of ore yesterday.

WEST WYE VALLEY.—John Kitto, July 13: There has been no change of importance in the ends driving east and west from the old engine-shaft since the date of my last report. At Brooke's shaft the greater part of the past month has been occupied in cutting lodge and timbering the shaft for drawing, but this is now completed, and the driving of the 40 both east and west resumed in good ore. The present prospects in this part of the mine I am pleased to say are exceedingly encouraging. The pit for the crushing mill wheel will be finished by to-morrow night, and we shall commence to fix the machinery next week. We have already prepared a large heap of stuff for crushing. We have strong force on at the reservoir, and are making good progress with the embankment.

WHEAL CREBOR.—J. Andrews, July 16: Setting Report: To drive the 120 end, east of winze, by six men, at 10l. per fathom; the lode in the end is 5 ft. wide, and worth 20l. per fathom. To stope the back of the 120, west of winze, by six men, at 90s. per fathom; the lode is 4 ft. wide, and worth 8l. per fathom. To drive the 108 end east, by four men, at 6l. per fathom; the lode in the end has improved, and is now 3 ft. wide, and worth 6l. per fathom. To stope the back of the 108 east, by six men, at 95s. per fathom; lode 5 ft. wide, and worth 15l. per fathom. To drive the 72 end east, by two men, at 90s. per fathom; the lode in the end is small and poor. To drive the 48 end east, by two men, at 110s. per fathom; the lode here is large, but we are carrying only 3 ft. of the north part, which yields a little ore, but not enough to value. The stope in the back of the 48 east, by six men, at 80s. per fathom; here we are also carrying 3 ft. of the north part of the lode, which is worth 8l. per fathom. To sink the main shaft from the surface, by nine men, at 15l. per fathom; the water in the shaft is getting very quick.

WHEAL GRENVILLE.—T. Hodge, July 16: The following bargains were set on Saturday last:—The north shaft is 4 fms. below the 140; set to 12 men, at 17l. per fathom. The 140 west end is set to four men, at 9l. 10s. per fathom. The 130 east end to two men, at 7l. per fathom. The stope in the back of the 130 east to two men, at 8s. 3d. per ton. To cut the ground for a balance-box at the 80, by nine men, at 140l.—bargain. The 150 to drive east, by eight men, at 10l. 10s. per fathom—four months stent. No. 1 stope in the back of the 150 east to four men, at 5s. per ton. No. 2 stope in the back of the 150 east to four men, at 7s. per ton. The stope in the back of the 150 west to two men, at 5s. 9d. per ton. The rise in the back of the 140 east to two men, at 8l. per fathom. The 130 to drive west, by four men, at 8l. per fathom. The stope in the back of the said level to four men, at 6s. per fathom. The 130 east end to two men, at 7l. per fathom. To stope the bottom of the 130 east, by six men, at 5s. per ton. To stope the back of the 130 east, by eight men, at 6s. 6s. per ton. To stope the back of the 130 east, east of Davie's, by eight men, at 5s. 9d. per ton. To drive the 50 west on the counter lode, by two men, at 40s. per fathom; the lode is 8 in. wide, principally composed of gossan, with occasional good stones of ore. I think that we have another branch standing further north, which will be proved when an opportunity presents itself.

WHEAL KITTY (St. Agnes).—S. Davey, R. Harris, July 14: New Shaft, Pryor's Lode: The ground in this shaft sinking below the 154 is much the same as for some weeks past, consequently we have no change, the lode being some little distance from the shaft. The lode in the 154, driving east of shaft, is poor. In the 154, driving west of shaft, on the branch, the branch is producing a little tin. The lode in the 142, driving west of shaft, is 3 ft. wide, and worth for tin 7l. per fathom. The lode in the 142, driving east of shaft, is 1½ ft. wide, and worth for tin 6l. per fathom. In the 130, driving west of shaft, the lode is 2¼ ft. wide, and worth for tin 9l. per fathom. The lode in the 118, driving west of shaft, is 2 ft. wide, and worth for tin 8l. per fathom. In the 90, driving west of shaft, the lode is 2 ft. wide, and worth for tin 7l. per fathom. The lode in the 65, driving west of shaft, is 3 ft. wide, and worth for tin 14l. per fathom.—Old Lode: The lode in the 100, driving west of engine-shaft, is 2½ ft. wide, and worth for tin 9l. per fathom. No lode has been taken up in the 90, east of engine-shaft, during the week.

WHEAL MARY HUTCHINGS.—H. Miners, July 18: The new arsenical works are progressing very favourably, and will, I have no doubt, be ready to work by the end of August, as stated in the contract, and I still adhere to what I have before said in my former reports that the work up to the present is well done, and when completed I believe will answer well. I am also pleased to say that the lode from which we shall supply the kilns with is looking well, and has further improved in the levels, which are driving both east and west of cross course; there is not the least fear about the production of mundic to supply them with, and that of a very rich nature if required.

WHEAL NEWTON.—H. Bennett, July 19: The 40 end, west of Cook's shaft, has further improved, and the lode is now looking well, yielding some rich silver ore; there is no doubt but what we have a valuable piece of ground from this point to the 30, as the rich stope in the latter level is just over the 40 end. The 40, east of cross-cut, and east of Cook's shaft, has improved, and we have to-day broken several sacks of very good silver ore; this is important, as the end is going east in whole ground. We have commenced to drive the 30 end west of engine-shaft, on the silver lode; it has a very promising appearance, yielding saving work for silver. This end is 120 fms. from the 30 end, in the eastern part of the mine, on the same lode. We have commenced to rise in back of the 30, on the silver lode, west of Cook's shaft; the lode is yielding good silver ore. All the other bargains remain without change.

WHEAL RUSSELL.—John Bray, July 19: The lode in the 25 is 4 ft. wide, producing stones of ore, showing indications of an early improvement. The tributers are getting wages in these pitches at 12s. 6d. in 1l.

WHEAL UNY.—Wm. Rich, M. Rogers, J. Rich, July 14: The shaftmen will begin to fix drawing-lift at Hind's next week. The 160 end east is worth 5l. per fathom. The 150 west is worth 10l. per fathom. The 150 west is worth 6l. per fathom. The 150, east of King's, is worth 7l. per fathom. The 140 end east is worth 11l. per fathom. The 130 end east is worth 6l. per fathom. The rise in the 60, west of incline shaft, is worth 10l. per fathom.

WYE VALLEY.—John Kitto, July 13: The sinking of the main engine-shaft below the 34 is now regularly progressing, and since the fixing of the new lift of pumps fair progress has been made; the lode still contains a little ore. The 22 east is still being driven through orey ground, and the lode looks very kindly. We have had to suspend the sinking of the winze below this level on account of the water, but there is good ore in the bottom of the same. Tippett's shaft has been communicated to the deep adit, and the driving of the lode eastward has again been resumed, and we shall soon be ready to commence sinking below in the run of ore ground passed through some months ago. Since my last we have sold to Messrs. Nevill, Druce, and Co. 70 tons of lead ore, at 12l. 8s. per ton.

FOREIGN MINES.

ARGENTINE.—Telegram from Buenos Ayres, July 14: 200 ozs. cleaned up, 450 tons treated. With salt 60 per cent. of gold extracted by arrastre from calcined ore out of trial pyrites, or 2 ozs. per ton. Caleiner working well on ore from stamps; ore abundant; pan indispensable.

BRITTANY MINERALS (St. Brieuc, France).—John Edwards, July 14: There is no change worthy of remark in the lode in the engine-shaft sinking below the 70 since last report; the lode is worth about 40l. per fathom for silver lead ore for the length of sump—12 feet. The ground sunk during the past week is 1 ft. 8 in. The lode in the 70 end driving south from sump is 2 ft. wide, and worth 12l. per fathom for lead ore, and letting out a quantity of water. The ground driven during the past week is 5 ft. The lodes in No. 1 and 2 stopes in the back of this level are worth respectively 10l. and 12l. per fathom. We have dressed during the past week 25 cwts. of lead ore, and I hope to raise and increase this amount in the coming week. All the machinery is in good order, and working well. The ore raised since last report is 10 tons.

LANESTOSA.—July 14: Matienzo: The fluor-spar portion of the lode in the 50 metre level, south of Guillermo's shaft, has increased to 2 ft. wide, with small branches of lead ore. The 50 metre cross-cut, both east and west of this shaft, continues in hard limestone. Angel's winze, below the 50 metre level, shows no change from the calcareous shale which has generally prevailed here. Aguirres's winze, at San Vincente's shaft, has proved the west lode to be only isolated patches or branches of mineralised matter in the country rock, and as no continuity is seen, sinking is suspended. The 30 metre level on east lode, north of San Vicente shaft, contains branches of flookan, carrying a little lead ore; the lode is 2 ft. wide. La Cruz deep adit, driving north, is very variable, having good branches of lead and blende ores for a foot or two, which are succeeded by comparatively barren patches. Soldado's winze, below deep adit: here the calamine is now much mixed with stone, and is scarcely worth saving. The stopes at Asuncion will be quite worked out this week.

FORTUNA.—July 11: Canada Incosa: No lode has yet been met with west of the cross-course in the 120, west of O'Shea's engine-shaft. The lode in the 110, west of Judd's shaft, is compact and regular, and yielding 1 ton of ore per fathom. The 30, east of San Carlos shaft, is still unproductive. In the 40, west of Abercrombie's, the lode is opening wider, and promises further improvement; present yield, ¾ ton per fathom. The 50, west of this shaft, yields ½ ton of ore per fathom. The 60, west of San Pedro Shaft, is again improving, yielding 1 ton of ore per fathom. The 70, west of San Pedro's, is worth ½ ton per fathom. The same level east is being driven through unproductive ground. In the 120, east of O'Shea's engine shaft, the lode is poor, and the ground very hard for driving through. The 110, east of Addis's, is very changeable, and has decreased in value to ½ ton per fathom. The lode in the 90, west of Kennedy's shaft, is very large and open, but contains only spots of lead ore. The 100, west of Lowndes', yields 1 ton per fathom. In the same level east the lode is small and unproductive, and the ground hard. A very promising lode has been met with east of the cross-course in the 90, east of Caro's shaft, yielding ¾ ton of ore per fathom. The 80, east of San Tomas engine shaft, has produced good stones of ore in the past fortnight, but is now poor. The sinking of San Pedro Shaft below the 75 goes on well. Fernandez' winze, below the 60, yields ¾ ton of ore per fathom. The lode in Fowler's winze, below the 50, is small and unproductive. Rita's winze, below the 100, yields ¾ ton per fathom. Laborde's winze, below the 80, is opening ground worth 1½ ton per fathom.

Los Salidos: The 130, west of Buenos Amigos shaft, is still poor. The lode in the 120, west of this shaft, is compact and regular, and is worth 1 ton of ore per fathom. In the 130, east of the same shaft, the lode is disordered by a large cross-course. The lode in the 130, west of Morris's, is split into valueless branches. The same level east contains spots of lead ore. The lode has been cut in the 120, east of Cox's shaft, and the men put to drive east; we hope soon to meet with some good ore ground here. The 110, east of San Pablos shaft, yields ¾ ton of ore per fathom. The 25, west of Swaffield's shaft, yields 1 ton of ore per fathom. The lode in the same level east has become small, and does not contain ore enough to value. The 55, west of Palgrave's, is again improving, now yielding ¾ ton of ore per fathom. The 65, west of this shaft, is without improvement. The same level east is opening tribute ground worth 3 tons per fathom. The sinking of Palgrave's engine-shaft below the 65 is temporarily suspended in consequence of an increase of water. San Miguel's shaft is holed to the 110. The lode in Alvarez' winze, below the 120, is composed of quartz and lead ore, but not sufficient of the latter to value. Gill's winze, below the 25, is at present in hard ground. Mimbre's winze, below the 110, continues to open ground worth 1½ ton of ore per fathom. Salientes winze, below the 100, produces ¾ ton of ore per fathom. Ramo's winze, below the 55, is worth ½ ton of ore per fathom. The machinery throughout the mine is in good working order, and everything is proceeding satisfactorily. We estimate the raisings for July at 350 tons.

LINARES.—July 11: Pozo Ancho: The lode in the 120, east of San Tomas shaft, is large, but does not contain any ore to value. In the 100, east of Warne's shaft, the lode is open and easy for driving, and yields stones of ore. The same level west produces ½ ton of ore per fathom. The 120 cross cut, south of Peill's shaft, is in hard granite. The lode in the 105, west of Peill's, has improved in the past week to 2 tons of ore per fathom. The 90, west of this shaft, is also worth 2 tons per fathom. In the 85, west of Peill's, the lode is small and poor. The lode in the 105, east of this shaft, is regular and well defined, and is yielding 1½ ton per fathom. The 90, west of San Francisco shaft, has fallen off a little in value during the past fortnight; present value 1½ ton per fathom. The 75, east of this shaft, contains a little ore, but nothing to value. The 65, being driven in the same direction, is poor. In Santo Temas shaft the new plunger-lift is fixed, and sinking resumed below the 120. No. 218 winze is holed to the 100. No. 221 winze below the 90 is going down in a lode worth 2 tons per fathom. The returns were kept up very regularly in the past month, and the stopes are at present without any change of importance. The various surface works are going on regularly, and the machinery is in good working order. We estimate the raisings for July at 200 tons.—Quinientos Mine: The 100 cross-cut, south of Taylor's shaft, is in hard ground. The lode in the 90, west of Taylor's shaft, is very regular, and consists of carbonate of lime and quartz. The 80, west of Taylor's shaft, yields stones of ore, but not enough to value. The 90, east of Taylor's shaft, yields 2 tons of ore per fathom. The lode in the 80, east of Addis's shaft, is composed chiefly of carbonate of lime. The 80, west of San Carlos shaft, is improving; it is now yielding fine lumps of lead ore. In the same level east the ground is easy for driving, but does not contain ore enough to value. The 65, east of Judd's shaft, is poor. The lode in the 45, east of this shaft, is disordered and unproductive. Domas winze below the 80 is valueless. Facundo's winze below the 65 is at present hard for sinking. In Arno's winze below the 55 the lode contains stones of ore. We estimate the raisings for July at 100 tons.

ALAMILLOS.—July 11: The 50, west of San Felipe's shaft, is unproductive, and the driving is suspended for the present. The lode in the 40, west of this shaft, yields 1½ ton of ore per fathom. The 20, west of the same shaft, yields ½ ton of ore per fathom. The 25, west of Abercrombie's shaft, is also worth ½ ton of ore per fathom. The 40, west of the same shaft, yields 1 ton of ore per fathom. The 50, west of Magdalena cross-cut, yields ½ ton per fathom; this is communicated with Torrente's winze. The lode in the 100, east of Taylor's engine-shaft, is better defined. In the same level west the lode is large, and produces a little lead ore. The 85, west of San Adriano shaft, is poor. The lode in the 60, east of San Victor's shaft, is open and easy for driving through. In the same level west the lode has increased in value to 1½ ton per fathom, and, being below the main slide, is a very important point. The 30, east of San Jose, is without change. In the 50, east of Judd's, the lode is small and poor. The 70, west of Judd's, is being driven through hard granite. In the 50, east of Judd's cross-cut, no lode has yet been intersected. The driving of the same level west is suspended. The 50, west of Sanchez' winze, yields ½ ton of ore per fathom. Good progress is being made in sinking San Victor's shaft below the 60. Timoteo's winze, below the 85, produces good stones of ore. We estimate the raisings for July at 175 tons.

[For remainder of Foreign Mines, see to-day's Supplement.]

THE EMMA MINE.—The chairman, Mr. A. W. Macdougall, in a long statement regarding the legal proceedings against the promoters of the company, states that, acting under the powers by special resolution of the company, he has made such arrangements with two of the original directors—Mr. E. Leigh Pemberton, M.P., and the Hon. Colonel Stanley—as will enable him to pay the debentures which were subscribed to carry on those law proceedings; but the chairman asks the debenture holders to postpone their security to such indebtedness, in order to enable the directors to carry further proceedings to a successful issue, as the verdict given in the American Court is regarded as unjust, as it enables all parties concerned in the formation of the company to escape.

PROSPECTS OF THE EMMA MINE.—We hear that the Emma Mine is being worked sufficiently to do something more than pay its expenses; and that operations on a larger scale have been deferred till the autumn. Mr. Trenor W. Park has had many difficulties to contend with, for no operator in Wall-street and conductor of railway and other enterprises can go to war with Jay Gould without risking character and fortune. The idea of bringing an action against Mr. Park for the recovery of $5,000,000 in his present financial condition is ludicrous, as we pointed out long ago; the only effect being, at the expense of the Emma Mine Company in London, to secure for General Schenck a judicial exoneration. Two years ago Mr. Park would and could have paid to place the mine in a working condition, according to his offer 40,000l. At the same time, Mr. Albert Grant could, and would, have added to that sum 10,000l., and the chances are that at this moment the shareholders, had they accepted the offer, would have been in possession of the mine, yielding some return. Following what we deemed ill advised counsel, they have expended all that remained and could be procured in legal proceedings, which can yield nothing but disappointment at a heavy cost; for now no one connected with the promotion of the company is in the position to pay, even in the event of a verdict against them. The old directors are compromising for large sums, probably in the fear of the precedent established in the Lisbon Tramways case. Mr. Pemberton, M.P., and the Hon. Colonel Stanley are said to have paid 12,500l. for the withdrawal of their names from the suit. Another director has offered 10,000l. for a similar discharge, which has been declined.—*Anglo-American Times.*

THE WEEK.

SATURDAY, JULY 14.—General Credit shares moved up to-day to 6½. The directors propose paying this month the usual interim dividend at the rate of 5 per cent., free of income tax. The shares were down to 4½ some three months ago. They are of 10l. each, with 7l. 10s. called up. Notwithstanding the general complaint as to the dulness of trade, Foster, Porter, and Co. will pay 12½ per cent. to the shareholders. There will also be a bonus of 5s. per share. The stock of St. John del Rey continues to be sold, and now fetches little more than 250. There has been a fall of 20l. in the course of the week. Exchequer shares give way ⅛—to ⅛, ¼. Van Consols, 6s. to 8s. Glyn, 7s. to 9s. Parys Mountain, 9s. to 11s. Rookhope, 19s. to 21s.

MONDAY.—A circular has been issued by several Richmond shareholders containing copy of a requisition to the directors for the convening of an extraordinary meeting, with the view of the appointing of a committee to make enquiries into the present position of the company. Shares are 6⅜ to 6⅝. A slight improvement took place in Exchequer; there were to-day several buyers at ⅜. The Van Consols and Glyn meetings will be held to-morrow, and meanwhile dealings in the shares is pretty well suspended. Parys Mountain shares continue to be wanted, and Plynlimmon were in request at 4s. In response to an improvement at New York, Erie moved up to 8⅜, and Illinois Central rose 81 (85⅝ to 86⅞). The market here seems powerless to initiate any great fall or rise. Direct Cable, 12¾ to 13. Cuba, 10¼ to 10¾. Panama, 2¾ to 3.

TUESDAY.—A large number of shareholders interested in Van Consols, Glyn, Penstruthal, and Cathedral met to-day at the Guildhall Tavern, committees of investigation being appointed who are to report to a future meeting. The position appears to be critical, but the meeting seemed rather sanguine of surmounting the financial difficulties. A large amount, it is said, has been overdue for years in respect of calls in the Penstruthal Company. In the foreign department the principal feature was a tumble of 2 per cent. in Turkish, 1871; the price of late has been forced up, but opened at the first commencement this morning 1 per cent. down. Parys Mountain shares are quoted 2s. lower—9s. to 11s. Tankerville were offered at 7½, and Roman Gravels at 9, Rookhope, 19s. to 21s.; Glenroy, 21s. to 23s.; Aberdaunant, 10s. to 12s. 6d.; Bampfylde, ⅜ to ⅝; Glyn, 7s. to 9s.; Van Consols, ¼ to ⅜; Penstruthal, 4s. to 6s.; Llanrwst, 2 to 2¼; Leadhills, 5¾ to 6. London and Yorkshire Bank shares were quoted 1⅛ to 1⅜; Pawson, 6 to 6¼; and General Credit, 6⅛ to 6⅜.

WEDNESDAY, JULY 10.—A check was given to day to a rise in railways. They opened dull in the morning, and when it was known in the afternoon that not only would there be no dividend on Great Eastern ordinary, but that the preference charges were 36,000l. short, there was in some instances a considerable fall. Great Eastern fell 1⅛, but Chatham (pref.) was a flat market, and gave way nearly as much. North British and Caledonian suffered a good deal. At the Cape Copper meeting to-day the Chairman stated that notwithstanding the wretched price of copper they were making a monthly profit of 8000l. Eberhardt fell to 6½, a few sellers coming on the market. Richmond were offered at 6¼, the requisition on the directors not being reviewed favourably. Pandora, ⅞ to 1⅛. Chapel House, 2½ to 1¾.

THURSDAY.—The markets opened dull, but later on improved, and at the last closed tolerably firm. Russian, 1873, from 77¾ to 78 were run up to 79. In railways a recovery took place in Birmingham, Berwick, Great Western, and Dover A. Eberhardt were pressed for sale at the last, and closed 5⅞ to 6⅛. Richmonds were slightly better, at 6⅜ to 6⅝. A rise occurred in Central Illinois. Exchequer shares were dealt in at 5s., and Glenroy at 20s. Parys Mountain, 9s. to 11s.; Rookhope, 19s. to 21s.; Van Consols, 4s. to 6s; Glyn, 6s. to 8s.

FRIDAY (*Opening*).—The markets are rather buoyant. Consols are quoted ⅛ better (94¾ to 94⅞), and several railways are better. Russian, 79 to 79½; Egyptian Preference, 60¼ to 60½; Dover, A, 11¼ to 11¼; Brighton, A, 106¼ to 106⅝; Caledonian, 125⅛ to 125¾. Mining shares as yet show little change. Argentine, 4 to 4⅛; Aberdaunant, 10s. to 12s. 6d.; Bampfylde, ⅜ to ⅝; Chontales, ¼ to ⅜; Bodidris, 10s. to 15s.; Don Pedro, 7-16ths to 9-16ths; Exchequer, 4s. to 6s.; Glenroy, 20s. to 22s. 6d.; Glyn, ⅜ to ½; Great Laxey, 20 to 21; Llanrwst, 2⅜ to 2⅝; Leadhills, 5¾ to 6; Parys Mountain, 9s. to 11s.; Pennerley, 1 16th to 3-16ths; Plynlimmon, 3s. to 5s.; Rookhope, 19s. to 21s.; Roman Gravels, 8⅞ to 9½; Penstruthal, 4s. to 6s.; Tankerville, 7 to 7⅛; West Tankerville, ⅞ to 1; ditto Preference, 1½ to 2; West Chiverton, 14 to 16; Van, 32 to 34; Van Consols, ¼ to ⅜.

——*Two o'Clock.*—Prices have given way somewhat. Berwicks have receded ¼, to 152¼. They were continued at 154. Great Eastern, from being 47, is now 46¾ to 46½. During the last few days colliery shares have been looking up, and at the moment may be considered as scarce. Chapel House, 2½ to 2¾; Cakemore, 2 to 2½; Bilson, 4 to 5; Newport Abercarn, 2¾ to 3¼; Alltami, 4 to 4½; Great Western, 2¾ to 3¼; Cardiff, 1⅜ to 1⅝.——*Four o'Clock.*—There has been throughout the day a good deal of buying of Turkish, 1869 and 1865, and both leave off firm at the best. Eberhardt, 6 to 6¼; North Laxey, 16s. to 18s.; Pandora, ⅞ to 1⅛; Milford Dock, 4¼ to 5¼; Milner's Safe, 9¼ to 9½.

FERDINAND R. KIRK.

Birchin-lane, July 20.

CHINA CLAY AND ARSENIC.—China clay is going into consumption in tolerable satisfactory quantities. Inferior sorts 12s. to 15s., f.o.b. Cornwall; "Rosemellyn," 24s.; BM.," 34s. New Consols arsenic makes 8l. 15s.—*West Briton.*

*** With this week's Journal a SUPPLEMENTAL SHEET is given which contains.—Original Correspondence: Mineral Wealth of Dakota Territory (T. H. White); Mining in the East—No. XVII; Coal Mining—New South Wales (R. D. Adams); the Royal Agricultural Show at Liverpool; Tin-dressing; Mining Institute of Cornwall; Mining Debts; the Truck System; Mining in the Combmartin District—Wheal Grenville—Machinery; West Basset Mine; Bedford United Mine—Gravel Mining—Foreign Mining and Metallurgy—Almada and Tirito—Foreign Mines—A New Patent Method of Fitting up Wheels and Axles—Manufacture of Slag Wool—Purification of Lead—Compressing or Condensing Ingots—Patent Matters—Meetings of Nerbudda, Cape Copper, West Godolphin, Bell Abbey, Van Consols, Glyn, Penstruthal, Cathedral, Tankerville, West Tankerville, Melyndwr Companies; Manganese Mines in Italy (R. E. Wilson); &c.

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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, JULY 20, 1877.

IRON.	£	s.	d.	£	s.	d
Pig, GMB, f.o.b., Clyde..	2	14	3-	—		
,, Scotch, all No. 1 ...	2	15	6-	3	6	0
Bars, Welsh, f.o.b. Wales	5	10	0-	5	12	6
,, ,, in London.	6	0	0-	6	2	6
,, Stafford., ,, .	7	10	0-	8	15	0
,, in Tyne or Tees ...	5	10	0-	6	0	0
,, Swedish, London ..	9	10	0-	10	0	0
Rails, Welsh, at works..	5	0	0-	5	5	0
Railway chairs	—	—	-	—		
,, spikes	—	—	-	—		
Sheets, Staff., in London	8	15	0-	9	0	0
Plates, ship., in London	7	5	0-	7	10	0
Hoops, Staff.	7	12	6-	8	0	0
Nail rods, Staff. in Lon.	7	5	0-	7	12	6
STEEL.						
English, spring	14	0	0-	23	0	0
,, cast	25	0	0-	45	0	0
Swedish, keg.....	16	0	0-	—		
,, fag. ham.	17	10	0-	—		
LEAD.						
English, pig, common .	20	2	6-	20	7	6
,, ,, L.B. nom.	20	5	0-	—		
,, ,, W.B.	21	0	0-	—		
,, sheet and bar..	21	7	6	21	10	0
,, pipe.....	22	0	0-	—		
,, red	22	5	0	22	10	0
,, white	27	5	0-	28	0	0
,, patent shot ..	24	10	0-	—		
Spanish.....	19	15	0	20	0	0
QUICKSILVER.						
Flasks of 75 lbs., ware.	7	5	0-	—		
SPELTER.						
Silesian or Rhenish ..	19	10	0-	—		
English, Swansea	21	0	0-	—		
Sheet zinc	23	10	0-	24	10	0

TIN.	£	s.	d.	£	s.	d
English, ingot, f.o.b...	71	10	0-	72	0	0
,, bars ,, ...	72	0	0-	72	10	0
,, refined.....	74	0	0-	—		
Australian	68	5	0-	—		
Banca	70	0	0-	—		
Straits	68	15	0-	—		
COPPER.						
Tough cake and ingot.	74	10	0-	75	0	0
Best selected	75	10	0-	76	0	0
Sheets and sheathing .	80	0	0-	—		
Flat Bottoms	84	0	0-	—		
Wallaroo	80	0	0-	—		
Burra, or P.C.C.	75	0	0-	—		
Other brands	74	0	0-	76	0	0
Chili bars, g.o.b.....	68	15	0-	—		
PHOSPHOR BRONZE.						
Bearing metal	£112	0	0			
Other alloys	£120	0	0-	140	0	0
BRASS.						
Wire	8d.	-	-			
Tubes.....	10	-	-			
Sheets	9	-	-			
Yel. met. sheath. & sheets.	6¾	-	7½			
Nails composition.....	8¼	-	9¾			

TIN-PLATES.*	per box.					
Charcoal, 1st quality ...	1	2	6-	1	3	6
,, 2nd quality ...	1	1	0-	1	1	6
Coke, 1st quality	0	19	6-	—		
,, 2nd quality	0	17	6-	0	18	0
Black .....per ton	16	0	0-	16	10	0
Canada, Staff. or Gla., at Liverpool	12	0	0-	13	0	0
Black Taggers, 450 of 14 × 10	30	0	0-	—		

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—Our markets are devoid of animation, and are still to a great extent artificially maintained, that is to say in proportion to the increase of stocks there has been no corresponding fall in value, consequently should there come a pressure to sell the depreciation might be very severe, as stocks are exceedingly heavy, and the demand is light. Importers might have entirely prevented the markets reaching this dangerous pitch if they had acted judiciously in the first instance by realising imports within a reasonable time after arrival, and not allowing stocks to accumulate so much, but now they cannot be greatly reduced without involving an enormous sacrifice, and holders must be fully sensible of their critical position, and ought to avail themselves of every opportunity to lighten their stocks, because if matters do not quickly mend the serious character of the losses will bring about failures, and prices would then be more depressed than ever. No reliance can be placed upon the present position of metals, for the demand having considerably diminished further concessions are absolutely necessary to stimulate it over again, and such is the impoverished state of our market that unless buyers were able to purchase cheaper than they could before they would actually lose money by doing business, and this we need scarcely say they are not desirous of doing. Sellers doubtless think it very hard to be so continually called upon to lower prices, especially when they are often selling below cost of production; but although it may be disadvantageous for them to comply, yet the reduction is not unfrequently attended with no advantage whatever to the buyer. They, in their turn, have to bear losses accruing possibly in another form; and it is simply that circumstances having altered necessitat-s trade being carried on with the minimum of a profit, or maybe at times with positive loss; and one thing is quite evident, that the only way in which sales can be effected at the present time is by keeping prices down, and not to decline orders with the slightest margin of profit, and to meet buyers' limits whenever practicable.

Competition, however, is generally sufficiently keen to protect buyers from paying too much, but it is unusually sharp just now, and will continue so until the great emporiums of the world get into a more prosperous condition. When this will take place it is rather difficult to predict, for the state of commercial affairs everywhere alike is, undoubtedly, very discouraging, and the immediate future possesses few favourable probabilities, and the chances are against any decided improvement, for we have yet to overcome the lamentable and devastating effects of famine, war, and poverty in Europe, Asia, and America; but the period of prostration will, of course, depend in a great measure upon the prolongation and extension of the Turko-Russian war. Some are hopeful that the war may soon be brought to a close, and that a general revival will quickly follow, and no doubt this is universally desired, for nothing is so repulsive as an internecine war; but, at the same time, the prevailing opinion appears to be against any near approach of peace—at least, no one has confidence enough to act upon the opposite view; and no wonder, for every week seems to bring forth fresh complications in regard to the Eastern Question, which naturally cause increased uneasiness lest the English Government may by force of circumstances be compelled to interfere. It would be strange indeed were our markets in any other than a sensitive state, and everybody can easily understand the anxious state of suspense in which holders are enveloped, and how much they dread any further movement of our fleet, or the dispatch of any number of troops to the Levant, or anything, in fact, of an hostile character; but it is also remarkably strange that standing, as we may be, on the brink of a war, holders are so dreadfully inert, and allow so much valuable time to pass away without making a strenuous effort to get relieved of a great portion of their burdens. The time may come when it will be too late to act, and regrets will be useless. They should sell while there is a chance, and not incur further risks by procrastination.

COPPER.—There has been only a small business doing, and prices have varied very little; Chili bars almost stationary at about 68*l.* 15s. for g.o.b. In manufactured, sales have been limited on account of sellers being unable to meet buyers' prices; orders for 4 by 4 brazing in large parcels cannot be obtained above 79*l.* Yellow metal 6¾d., but no extensive transactions; the market generally is quiet, but tolerably steady. The next sale of Wallaroo and Burra is fixed for the 24th inst., when there will be offered 500 tons cake and 100 tons ingots of Wallaroo, and 214 tons of Burra cake and 10 tons of ingots. In the event of all the Wallaroo being sold the importer engages not to sell again until Sept. 24. It would have been better to have fixed the interval at three months instead of two months; but, perhaps, the terms of the following sale may be modified to this extent—at any rate, the time is longer than that of the Burra Company, for they only bind themselves till the 21st of August, or less than a month. Such a short date is particularly objectionable, as it affords little or no time for a dealer to turn his purchase over, and it should be immediately extended, otherwise it will prejudice the sale. The announcement of these Australian sales has had the usual effect of disturbing the equanimity of the market, and causing irregular transactions and widely different prices to be quoted. While 81*l.* was paid yesterday, and 79*l.* 17s. 6d. to-day, for immediate delivery of Wallaroo; 78*l.* 10s. was also reported to have been taken for October delivery; 79*l.* 10s. ex sale. Burra ruled between 74*l.* 10s. and 75*l.* These various quotations throw great uncertainty over the Wallaroo sale prices, and tend to unsettle buyers in forming their opinions. But there are three things in its favour, and three things against it; and it is for buyers to determine the correct course to take. The slackness of trade, the danger of war, and the relatively high price will help to depress buyers; while, on the other hand, the smallness of the quantity, the interval between the next sale and speculation may help to sustain prices. Setting one thing, however, against another, and impartially weighing the mixed influences, we come to the conclusion that anything beyond 78*l.* for the cakes would be an extreme value.

IRON.—If the general prosperity of the metal market mainly depends upon the revival of the iron trade, we fear that time is likely to be distant, for it is in a most deplorable and declining state just now. As regards this market, very few orders are to be obtained, and nearly every other market in the kingdom appears in a similar condition, but what is worse, there seems no prospect of any amendment. The ironmasters one and all declare that they are losing money at the present time by carrying on their several works, and to attempt to lower prices further would be simply ruinous, and yet they will have to do so, not merely to secure a shipping business, but even for local consumption foreign iron can be imported cheaper than English is manufactured, therefore unless some alteration takes place in the cost of production, it will merely be a question of time when we cease making altogether, and if the iron trade of the country is destroyed it will not be long before others follow in the same direction. We have so repeatedly pointed out the necessity for immediate action on the part of those who are deeply interested in the trade that we begin to think nothing but compulsion will make them move, they will go on in a certain style until they are exhausted, and their property is about to pass out of their hands, before any effort is made to recover the trade, and thus their difficulties will be considerably increased.

There has been a fair demand for the common kinds of iron, but as Belgian can be bought so much cheaper than English, our ironmasters get very few orders. Common bars of Belgian make have been sold as low as 5*l.* 6s. in London, whereas English is 6*l.* to 6*l.* 2s. 6d., or about 15s. per ton dearer; such a wide difference as this renders it perfectly impossible to do business in English, and if our makers cannot compete with Belgium they must shut up, and the sooner they do so the better if they are carrying on a losing trade. We have lost a great part of the continental trade in manufactured iron, and a large proportion of the Indian orders are now executed over in Belgium. The American trade would appear to have gone entirely from us according to a report just issued on the American steel and iron trade, for the returns of the production and consumption in that country for last year as compared with those of previous years convey the idea that notwithstanding the existing cloud of temporary depression the trade is decidedly sound and promising. The report goes on to say that the only drawback to the capacity of the Union to supply its own wants in these departments is the rapidly declining ratio of iron and steel imports from Great Britain, which the figures indicate. It is evident that if the States continue to advance in steel and iron manufacture at the same pace at which they progressed since 1871 the time cannot be far distant when imports in that department will cease, and possibly competition with European productions in foreign markets may begin. In pig-iron American supplies have augmented from about 500,000 tons in 1852, to 2,093,230 tons in 1876. On the other hand, importation of the same article from Europe has decreased from 245,535 tons in 1871, to 83,072 tons in 1876. In the latter year there were also sold 879,629 tons of rails, against 792,512 tons in 1875, thus exhibiting an increase of 11 per cent. in the native manufacture of railway plant. Nineteen States and one Territory were occupied last year in rail-making, the most prominent being Pennsylvania, Illinois, and Ohio.

The report further mentions that to illustrate the startling decrease in the importation of rails from Europe, it may be observed that whereas 515,000 tons of iron and 50,701 tons of steel rail were introduced into the States in 1871, chiefly from England; in 1876 only 287 tons of iron rails were imported, and not a single ton of steel rails. The decline in the importation of general descriptions of iron is almost as remarkable. In 1871 the gross quantity introduced from abroad, exclusive of rails, was 148,032 tons, and in 1876 the total had dwindled to 28,569 tons. Dull trade and the bankruptcy of many existing railways, does not appear to retard seriously the work of railway extension in America. In 1876 the total mileage in operation was 77,514 miles, as compared with 74,658 in 1875, and 72,741 in 1874. The productive capacity of the iron furnaces and rolling mills of America is equal to at least twice the actual yield of either of the last two years. Of 714 completed furnaces at the close of 1876 only 236 were in blast, while 420 were out of blast. Mr. Swank's annual report ends by saying that there is a single fact, however, calculated to reassure those who may be apprehensive of peril to the position of Great Britain in the manufactures referred to by the immense strides recently made in the United States by those particular industries, and that is if masters and workmen will only devise some expeditious method of settling their trade disputes it will be long before our supremacy can be sensibly affected.

In Scotch pig the market is 54s. 3d. for mixed numbers, cash, and 54s. 4½d. one month.

SHIPMENTS.		
Week ending July 14, 1877	Tons	7,472
Week ending July 15, 1876		6,042
Increase		1,430
Total increase for 1877		8,888
Imports of Middlesborough pig-iron into Grangemouth:—		
Week ending July 14, 1877	Tons	3,607
Week ending July 15, 1876		2,015
Increase		1,592
Total increase for 1877		38,420

LEAD.—This metal keeps fairly steady, but the demand is extremely quiet.

SPELTER without change. Zinc at public sale yesterday realised 23*l.* net.

STEEL.—There is no appreciable change in the market; the demand is comparatively small, and great depression still exists in the English trade. Rails are still in request for America, but contracts for cash terms only are entertained.

TIN.—Our market has again slightly receded, and the closing price for Australian is 66*l.* 5s. net, and 66*l.* 15s. for Straits. The advices from Rotterdam report that market also to be very quiet, and prices giving way. Banca quoted 42¼f., and ex the ensuing sale 42f.; Billiton, 40 to 42½f.

TIN-PLATES.—Makers are trying to obtain higher rates, but buyers seem disinclined to pay more than a trifling advance; 18s., however, has been obtained for brands of fair quality coke, but lower qualities are to be had about 3d. per box cheaper. The New York market is quiet, but sellers are firm. Coke and charcoal ternes are scarce, and prices are a shade higher. IC charcoal tin are quoted at $6·62½ to $6·87½; and IC coke, $5·50 to $5·75; charcoal terne, $6 to $6·12½; and IC coke terne, $5·50 to $5·62½ gold.

THE IRON TRADE—(Griffiths's Weekly Report).—Friday Evening.—The price of Scotch g.m.b. pig-iron this afternoon on the Glasgow Exchange is 54s. 3d., exactly the same as the price this day week. Since the Birmingham Quarter-Day we have had only a quiet week in the general trade. Iron rails are weaker; very low prices are spoken of. We have no actual business to report. It is said that a large lot of steel rails for the Continent are on the market, but we think the most is made of it; anyhow, we have no contract to report in steel rails. There is a moderate business doing in sheet-iron, and in this class prices are firm. The demand comes from export agents and the galvanisers of this country. Boiler-plates are flat; hoops the same. Nail rods in fair demand for export. Wire rods and wire itself is in slow demand. Rylands, the great Warrington house, have reduced the price of their wire-ropes this week. E. T. Wright and Sons, of the Monmoor Works, have reduced the price of their plates 10s. per ton. Monmoor best plates are now 10*l.*, sheets 9*l.*, and bars 8*l.* 5s. Guest and Silvester have reduced the price of their rolls 1*l.* per ton. With these exceptions, there are no official changes in any district. The market for the raw material is very unsatisfactory.

Middlesborough prices weak, 39s. for forge. Makers getting no money. Staffordshire smelters dissatisfied, and working without profit. Price, 4*l.* for best mine, with few orders. Shropshire and North Staffordshire prices unsatisfactory; stocks increasing. The same state of things exists in Derbyshire, Northamptonshire, North Wales, and the Frodingham district. We are glad to say that the West Coast forms an exception to this disheartening report. The trade has never been so bad here as in other districts. Prices have rather hardened the last week, and few of the makers care to sell at present rates, Millom having received large orders from the Continent for their noted Bessemer pigs. With regard to the metals—copper little change in value; tin down 30s.; Straits sold to day at 68*l.* 10s. This market is inherently weak, lower prices near at hand. Spelter no change in price, but buyers shy; all anticipate a reduction of 1*l.* per ton before business can be done on the usual scale.

The MINING SHARE MARKET has been particularly quiet this week, very little business has been transacted, and prices remain merely nominal.

At the Cornish Ticketing, on Thursday, the Copper Standard declined 3*l.* 15s., the average price of the ore was 3*l.* 19s. 6d. per ton; quantity sold, 3447 tons.

The mines chiefly dealt in have been Tankerville, Roman Gravels, North Laxey, Glenroy, South Condurrow, Rookhope, Parys Mountain, East Van, Leadhills, West Tankerville, &c.

TIN MINES show no particular change. Dolcoaths are quoted 26 to 28; Tincroft, 13 to 14; Carn Brea, 26 to 28; Cook's Kitchen, 12s. 6d. to 17s. 6d. West Godolphin, 2½ to 3; at the meeting the accounts showed a balance at bankers of 906*l.*, other assets 519*l.* The tin sales credited realised 2237*l.* A large engine has been purchased and erected. Penstruthal, 4s. to 6s.; South Condurrow, 7¼ to 8; South Crofty, 10 to 10½; Wheal Grenville, 27s. 6d. to 32s. 6d.; Wheal Kitty (St. Agnes), 1⅛ to 1⅜; Wheal Uny, 1 to 1¼.

Among COPPER MINES Devon Great Consols are quoted 4⅛ to 4⅜. In the 160 east the lode continues a good course of ore, worth 40*l.* per fathom, Gorvell's winze, below the 160, 20*l.* per fathom. The month's ore sold on Thursday (924 tons) realised 3660*l.* South Caradon, 100 to 110; the ore (470 tons) realised 3135*l.*; the best price made was as high as 16*l.* 10s. per ton for 30 tons. Two other parcels fetched over 11*l.* per ton. Marke Valley, 25s. to 30s.; the ore realised 1292*l.* East Caradon, ⅜ to ½; the sale of ore (100 tons) brought 365*l.* 19s. Hingston Down, ¼ to ⅜; the sale realised 494*l.* Parys Mountain, 10s. to 11s.; an extraordinary meeting of the shareholders has been called to carry out the proposition for dividing the sett, and working Morfa-du as a separate mine. The idea of bonus shares has been given up, and the new company will be in 11,250 shares, at 1*l.* each; and will be offered, in the first instance, to the Parys shareholders at the rate of one share in Morfa-du for two held in Parys, and payable by instalments of 5s. per share, extending over twelve months. There is said to be no better speculation in the market than Parys Mountain, and the shares, with 3*l.* paid, being at the present low price is attributed to the want of sufficient capital, which has been long felt, and there has been a fear that the mine might stop on that account. Should the present plan, however, be carried out, and an ample capital be secured, it is considered that the shares would immediately rise to their former value. The Morfa-du Company, from the large offers already on hand for the blue stone, would, it is said, soon pay good profits, so that in both cases it is, the promoter's argue, to the advantage of the Parys shareholders to secure the Morfa-du shares to which they are entitled before they are offered to the public. Wheal Crebor, 1½ to 2; the 120 east is worth 20*l.* per fathom; the 108 east 6*l.* per fathom. The ore sold on Thursday for 447*l.* 12s. Prince of Wales, ⅜ to ¼: the ore realised, with carriage, 296*l.* Bedford United, 2s. 6d. to 7s. 6d. Gawton, 2s. 6d. to 7s. 6d. West Seton, 28 to 30. West Tolgus, 62 to 64. Tolgus, 5 to 5¼; the lode in the 25, we understand, continues to improve.

LEAD MINES show little variation. Roman Gravels, 8¾ to 9½; the sampling this time is 175 tons of lead ore. Tankerville, 7⅛ to 7⅜; the meeting was held on the mine, and full particulars will be found in another column. West Tankerville, ⅛ to 1; the 86 has improved to 1½ ton of lead per fathom. Particulars of the meeting in another column. Leadhills, 5⅜ to 6¼; the mines are looking well, and opening out good reserves of ore. The returns for the month of June were 325 tons, Ladywell, 20s. to 35s.; Pateley Bridge, 2¼ to 2½; the lode in the back of the 30 east, on Rake vein, is a course of ore 3 ft. wide, of nearly solid metal. Van, 32 to 33. East Van, 5⅜ to 5⅝; the 25 west has improved, and has ore in it. Great Laxey, 20 to 21. North Laxey, 17s. to 19s.; the lode in the shaft has improved, and the sampling on Tuesday will be 50 tons of lead ore. Rookhope, 20s. to 22s. 6d. Cargoll, 3 to 4; at the meeting here a call of 3s. per share was made.

West Pateley Bridge are quoted 1 to 2. Three shafts (Craven Cross, No. 2, and New Discovery) are being sunk vigorously upon the various lodes, which, we are informed, are opening out satisfactorily. Herodsfoot, 4⅜ to 4½; Aberdaunant, 10s. to 12s. 6d.; East Craven Moor, 10 to 11; Glyn, ½ to ⅝; Llanrwst, 2⅜ to 2⅝; Van Consols, ¼ to ½; West Chiverton, 14 to 16; West Craven Moor, 11 to 12. Gorsedd, 5 to 5⅜; the mine is opening up well. Denbighshire, 1½ to 1⅝. Pennant, 5 to 5½; the 60 stopes look well. Bodidris, 1 to 1¼; St. Patrick, 1⅛ to 1⅜; Grogwinion, 3 to 4; Red Rock, 1⅜ to 2¼; South Cwmystwith, 3½ to 4½; St. Harmon, 2¾ to 3¼; Wye Valley, 3 to 4; West Wye Valley, 3 to 4; West Goginan, ½ to 1; ditto preference, 1½ to 2.

In FOREIGN MINES Argentine are 4¼ to 4⅜; Blue Tent, 3 to 3½; Condes, 2⅞ to 3½. Hultafall, 5⅜ to 6¼. Santa Barbara advices this month show a profit for May of 578*l.* 7s. 4d. The gold produced was 3880 oitavas, worth 1649*l.* The yield of the ore shows a higher percentage for gold. Almada and Tirito, ⅛ to ¼; Chontales, ⅛ to ⅜; Don Pedro, 7-16ths to 9-16ths; Eberhardt and Aurora, 6 to 6⅛; Exchequer, 3 16ths to 5 16ths; Flagstaff, 3 to 3½; Frontino and Bolivia, 2⅞ to 3; I.X.L., ¼ to ½; Javali, 8s. to 10s.; Last Chance, ⅜ to ⅝; New Quebrada, 1⅛ to 2½; Panulcillo, 1 to 1½; Pestarena, 3s. 6d. to 4s. 6d.; Richmond, 6⅜ to 6⅝; South Aurora, ⅛ to ¼.

The Market for Mine Shares on the Stock Exchange has presented little of interest during the week, quotations remaining without alteration, and merely nominal. The comparative firmness is attributed to the circumstance that the few transactions which have taken place have been for investment rather than speculation, while there is less than the usual amount of floating stock upon the market. The leading event of the week has been the meetings of the shareholders in the four companies—Van Consols, Glyn, Penstruthal, and Cathedral—managed by the late Mr. Matthew Greene, and it is to be regretted that the disclosures there made are not calculated to improve the position of directors, nor increase the confidence of the public in either managers or boards of management, although in this particular case the penalty for the carelessness, to use the mildest term, may, if the matter be brought before the Courts, probably fall upon the directors personally, and not upon the general body of shareholders. Van Consols is penniless, and in the hands of the liquidator; the Welsh shareholders appear to have found some money to keep the water forked up to the date of the meeting, and the mine would no doubt have been by this time filling with water had not the liquidator been directed by the Court, in the interest of the creditors and contributories, to provide funds to keep the mine going. In the case of Glyn the position is still more lamentable. Not only is the company without funds, but extraordinary proceedings have taken place in connection with financing the company, the legality of which cannot be too fully discussed, since, if the step be legal, shareholders in public companies are deprived of the smallest protection from ruin. The company being without funds, a directors' meeting was held—Mr. Greene, Mr. Thomas Jones, and Mr. William Thomas being present—and it was arranged that the 20-inch engine and stone-breaker should be given as security to the said William Thomas against an advance of 400*l.* Mr. Greene's clerk declared that the understanding was that the loan was to be repaid out of the proceeds of the ore to be dressed, and in no other way, but be this as it may Wm. Thomas has seized and removed the property. That such proceedings would be sanctioned by any British court of law can scarcely be conceived, as it is obviously a case of three directors giving one of their number control of part of the company's property to the prejudice of other creditors. The share ledgers have not yet been investigated either in Van Consols or in Glyn, and it was at first hoped that as in the case of Cathedral everything is correct and straightforward, but it appears that in both cases there are discrepancies. In the case of Penstruthal the share accounts have been investigated by Mr. Ashmead, who declares that there are 4035 more shares upon the register than there should be, apparently from shares having been transferred (and it is to be presumed certificates granted for them) by transferors who did not possess the shares so transferred. The transferors of these bogus shares were according to Mr. Ashmead's statement—M. Greene, 1750; C. Gidney, 885; C. Lane, 315; and C. W. Skinner, 1085, equal to 4035 shares, and although there are some transfers to come in to one more of these persons, which can be applied to reduce the number, there are he says still 2054 shares in the aggregate to be made good. Now, if the directors have signed the certificates for these shares there may be a question whether they are not personally liable to the holders, if otherwise the transferors are liable as the transferrees have had no valuable consideration for their money. The best course for the directors to adopt is obviously to buy up as many shares as are over-issued, and at once cancel them; indeed, it is understood that this course has already been commenced, and a consequent advance in the price of shares is anticipated. The whole matter will doubtless give rise to much interesting discussion.

New Zealand Kapanga, 2¼ to 2¾; the letters received this week per mail, *via* San Francisco, are satisfactory. Good progress was being made in the various points underground. The No. 5 level, going north towards the Albion shoot, was rapidly nearing the point aimed at, and the manager thinks that when he reaches that shoot of gold his position for the future will be assured. The specimen referred to has reached the office, and is remarkably rich.

St. John del Rey, 250 to 270; the latest telegram received gives the produce for the first division of July, nine days, at 9500 oits., of the value of 3681*l.*, the ley of the ore being 6·7 oits. per ton. The telegram explains that the produce is small, owing to there being work going on which interferes with the working of the best stopes. Santa Barbara, 1¾ to 2; 1062 tons were stamped during May, yielding 3880 oits. of gold, valued at 1649*l.*, against a cost of 1070*l.*, thus leaving an estimated profit of 578*l.* Argentine, 4¼ to 4⅜; a telegram received states that the trial of the pyrites ore under proper treatment and calcination by Mr. Oxland had yielded 2 ozs. of gold to the ton. The company considers itself fortunate in securing Mr. Oxland's advice, and that under his directions in the reduction department, &c., the difficulties which have hitherto surrounded the company will be removed. All that remains, they say, is to supply the small amount of machinery and materials required by him to have his plans carried out. Condes, 2⅞ to 3¼; from a report in by the Pacific mail to-day, the manager was up at the mines. This is considered important, as at the time of writing it was the depth of winter. His report is expected by mail due a fortnight hence. The latest accounts received state that the mines and works generally were being steadily prosecuted, and the prospects for the coming season good.

Frontino and Bolivia, 2⅞ to 3¼; it does not seem to be quite clear, even among the shareholders, that during the nine months' revolution—in face of abstraction of labour and other retarding causes—the actual profit realised amounted to 2074*l.* Recent shareholders are probably not aware that the company possesses an extensive territory, and such a number of mines that (as stated in the last advices) "the agent does well if he continues to take a look into each mine once a month—this state of affairs is the consequence of the

growth of the mines." The agent continues to predict a great future for these mines; the monthly returns from them will (Mr. Robert White states) soon attain to no less than 150 lbs. Spanish (2250 ozs. of gold).

Richmond, 6⅜ to 6⅝; no report from the manager has reached the London office this week. As all the chief officials and heads of departments are required as witnesses in the coming trial at San Francisco, which begins next Monday, it is probable that they have already started for that place. The auditors are said to have passed the accounts, which are now in the printer's hands, and will be forwarded as soon as ready to the shareholders. As the company were restrained by injunction from working on the advanced portion of the lode from which the supplies of ore were then being won the smelting since has necessarily been of a very limited character, and no large addition to the balance available for dividend in February last can be expected. Since August last, when the profits for the month were over 20,000*l.*, the body of fine galena then available, which so swelled the profits, proved to be only a thin stratum, which was succeeded by an enormous mass of irony ore, without sufficient lead to flux it, and as a consequence needing 8½ tons of ore to make a ton of bullion instead of 5½, thus increasing the cost at every stage, and diminishing the return. The proportion of cost to return has fluctuated greatly, and must always be subject to the nature of the ore available. With good galena at hand over one third of the ore produced at the mine can be relied on as profit; without a due proportion of lead, the balance is reduced to about one-fifth. It seems to be the general experience of the locality that large masses of ferruginous ore are certain to have close at hand corresponding stones of galena, though both, unfortunately, are not always met with simultaneously. The Eureka Company had a find of rich ore in their fifth level, which has revived their smelting power, and raised the value of their stock some 37 per share. This bonanza is approaching the Richmond boundary, and if it crosses it will belong to that company. At this time, on the ground belonging to the Richmond, but under injunction, large masses of fine galena are proved to exist, and the discovery of a similar body in the Eureka Company's territory is a striking proof of the wonderful wealth yet to be found in Ruby Hill.

Eberhardt and Aurora, 6 to 6¼; there is nothing new to report.

Chicago, 2 to 2½; telegraphic intelligence announces that—"Injunction confirmed, subject termination suit; validity of patent reaffirmed." Exchequer, 3-16ths to 5-16ths; this week's advices state that the situation is unaltered; it is understood that subscriptions for debentures are coming in. I.X.L., ¼ to ⅜; the connection has not been made between the Buckeye adit and the O. K. shaft, and until then no opinion can be formed as to the width of the lode towards the footwall. The face of the adit drift is in a large lode, showing ore. The shaft is in fair blasting ground, and the water not very troublesome. When the communication has been made with the O. K. shaft the mine will be ventilated, and will be a good outlet to it.

The market for Hydraulic or Gold Washing shares remain unchanged, prices being nominal. The water season is fast drawing to a close, though from accounts received it does not appear to have been so bad as anticipated. Blue Tent, 3 to 3¼; a very satisfactory letter from the manager appears in another column. He hopes to continue washing without interruption. The returns hitherto have been exceedingly good, and warrant the anticipations formed. The Chairman of the company has left England on a visit to the property; he also intends visiting the mines of the Oregon Company. Birdseye Creek, ¼ to ½; in another column will be found a letter from the superintendent. The washing will be continued throughout the month of July. We are informed the annual meeting will be held next month, by which time the result of the season's work will have been ascertained.

Haltafall, 5⅞ to 6¼; active operations are said to have been commenced in preparing the dressing-floors to render available the ore at surface and in course of being raised. The latest advices show that the course of ore continued as rich as ever in the bottom of the shaft.

Lead mines without special change. Van, 31 to 33; operations are progressing as usual. The sinking of the shaft below the 105 will be immediately resumed and pressed forward to the next level. The various points underground are without change. The usual sampling has been made. Grogwinion, 3 to 4; all points yielding as well as usual. The deep adit continues to be the best point in the mine, and according to latest accounts is opening up exceptionally rich. The half-yearly meeting will shortly be held. Wye Valley, 3 to 4. The latest accounts are exceedingly encouraging; the driving of the adit east is about to be resumed, and the sinking of the shafts is also proceeding rapidly, while at the same time good reserves of ore are being accumulated, and steady sales are now assured.

West Wye Valley, 3 to 4; the driving of the 40 has been resumed both east and west in good ore ground, and Brookes's shaft is about to be sunk for a deeper level. Dressing machinery and the large reservoir nearly completed, and the prospects altogether very satisfactory. South Cwmystwith, 3½ to 4½; all operations going on as usual, and good progress being made. Red Rock, 1⅞ to 2⅛; works at all points going on satisfactorily. St. Harmon, 2⅞ to 3⅛; satisfactory progress continues to be made at the mine, and the prospects are steadily improving. The company have an available balance of working capital of 6600*l.*, which is considered ample to do all that will be necessary to fully establish the concern as a profitable undertaking. West Goginan, ½ to 1; the sinking of the shaft is making good progress, and it is believed that the next level will yield some good discoveries. The lode has in several places recently much improved.

Pateley Bridge, 2 to 2⅛; the only change reported from the mine is that in the 30 east on Rake vein. The agent reports a course of ore in the level, 3 ft. wide, nearly solid metal. West Pateley Bridge, 1½ to 2; good progress is reported as being made in driving the 56, the lode being about 5 ft. wide, composed of "the usual matrix for producing lead ore in paying quantities in this district." Three shafts are being sunk, and the different lodes are considered to be opening out satisfactorily.

Subjoined are the closing quotations:—

Assheton, 1 to 1⅛; Carn Brea, 25 to 27; Devon Great Consols, 4⅛ to 4⅛; Dolcoath, 27 to 29; East Caradon, ⅛ to ⅛, call paid; East Van, 5¼ to 5⅜; Glyn, ⅛ to ¼; Great Laxey, 20 to 21, ex div.; Great West Van, 1-16 to 3-16; Hingston Down Consols, ⅛ to ⅛; Leadhills, 5⅛ to 6⅛; Marke Valley, 1⅛ to 1¼; Parys Mountain, ⅛ to ⅛; Pateley Bridge, 2 to 2⅛; Pennerley, ⅛ to ¼; Penstruthal, ⅛ to ⅜; Roman Gravels, 9 to 9½; Tankerville, 7 to 7⅛; Tincroft, 12 to 14; Van, 31 to 33; Van Consols, ⅛ to ¼; West Assheton, ½ to 1; West Chiverton, 13 to 15; West Pateley Bridge, 1½ to 2; West Tankerville, ⅞ to 1⅛; Wheal Crebor, 1½ to 2; Wheal Grenville, 1⅛ to 2; Almada and Tirito, ⅛ to ⅜; Argentine, 4¼ to 4¼; Birdseye Creek, ⅛ to ⅜; Blue Tent, 3 to 3¼; Cape Copper, 36 to 38; Cedar Creek, ⅜ to ½; Chontales, ⅛ to ⅜; Colorado Terrible, 1¼ to 1¼; Condes of Chili, 2¼ to 3⅛; Don Pedro, ⅜ to ⅝; Eberhardt and Aurora, 6 to 6½; Exchequer, 3-16ths to 5-16ths; I.X.L., ⅜ to ½; Flagstaff, 3⅛ to 3⅜; Frontino and Bolivia, 2¾ to 3¼; Haltafall, 5¾ to 6¼; Javali, ⅛ to ⅜; New Zealand Kapanga, 2¼ to 2¾; Last Chance, ½ to ⅝; New Pacific, ⅛ to ⅛; New Quebrada, 1⅞ to 2⅛; Pestarena, ⅛ to ⅛; Plumas Eureka, 2½ to 3; Port Phillip, ⅜ to ½; Richmond Consolidated, 6¼ to 6⅝; St. John del Rey, 250 to 270; San Pedro, ½ to ¾; South Aurora, 3-16ths to 5-16ths; Sierra Buttes, 1¼ to 1¾; Tecoma, ½ to ¾; United Mexican, 1½ to 2.

COLLIERIES.—The present state of the market for this class of shares shows some improvement upon what was the case at the time of our last writing, when but a small amount of business was transacted. A good enquiry has sprung up for shares in the best collieries, and where prices have not advanced at least greater firmness is noticeable. In the case of Thorps Gawber a rise of nearly 2*l.* is to be recorded, making the present price nearly double that of a month ago. The rise is due to the report of the issue of debentures having been completed and the company having thus been placed upon a thoroughly sound financial basis. A slightly improved condition of trade in the district may also have had its effect, large numbers of shares having been purchased for local buyers, while orders from the neighbourhood of the colliery still remain unfulfilled. We pointed out some weeks ago that this company had been unreasonably neglected, and that the shares should prove a good investment; and we venture to think the result has fully justified our expectations. With a fair rise in the price of coal, these shares would soon again realise much higher rates. Thorps Gawber shares having at one time touched 4*l.*, close at 2¼ to 3. Chapel House have been done at 3*l.*, and close at 2½ to 3; the reports from this colliery continue of the most satisfactory character. The new 15 ft. pit has been sunk to a depth of 240 yards. During the past week a circular has been sent to the shareholders soliciting applications for debentures remaining unissued, and which amount to 5380*l.* out of 40,000*l.* Seeing the large plant possessed by the company, and its present profitable business, these debentures should prove a safe investment and be speedily taken up. We notice that it is stated the output has been increased by 1000 tons per month (we are informed that the raisings for June show an increase of 1500 tons), and the profits are now at the rate of 1s. 10d. per ton. The following extract from the circular also calls for attention: "The second pit will be down to the Park Mine about the end of the present year, and the output of the colliery will be at once increased to 1000 tons per day. Taking this as an average rate of output, and the present average rate of profit per ton as likely to continue, a profit of 27,500*l.* per annum will be realisable; while the fact that the coal from the Park seam is worth 1s. to 1s 6d. per ton more than that now being worked leads to the conclusion that profits will be at the rate of at least 2s. 6d. per ton, in which case the returns will be equal to 37,500*l.* per annum. There are, moreover, the prospects of a rise in the price of coal, which may be taken for what they are worth."

Altami shares close at 4¼ to 4⅜; Llay Halls, 9 to 9⅛ and Mold Argoed, 2¾ to 3. The Nerbudda Coal and Iron Company held its annual meeting of shareholders on Wednesday, when a dividend at the rate of 2½ per cent. per annum was declared, a small balance being carried forward to the next account. The profit made during the year (3500*l.*) may be considered satisfactory, seeing the bad state of trade and the many difficulties the company has had to contend with, among which may be mentioned a fire, which was, however, easily mastered in the works. Cardiff and Swansea shares have been enquired for, and close at 1⅛ to 1¼. The annual meeting of the shareholders has been called for the 27th inst. The balance sheet to be presented shows a loss on the year's working of 7849*l.* A small profit was made on the working of the Pentre Colliery, but this is completely overshadowed by the loss on the Resolven Colliery, together with the extraneous expenses, such as for management, debenture interest, &c., which should, however, be spread over the working of the property as a whole. Considering that this company's coal is of the best in the South Wales market, and realises the highest prices, some idea may be gleaned of the state of the coal trade, as also that any colliery which can now boast of having a balance to credit of its working account cannot fail to prove a good investment. The amount of coal raised for the year was 288,173 tons.

The West Mostyn Colliery has also called a general meeting of shareholders, which will be held on the 24th inst. The directors will lay before the shareholders their scheme for raising money by means of debentures, for the purpose of completing the works. It is suggested that debentures to the extent of 43,940*l.* should be issued, bearing interest at the rate of 6 per cent., and that a bonus of the company's deferred shares to the same amount should be given to subscribers. The coal has been proved of good thickness, and is of the best quality. The position of the colliery is such as to give it an advantage of 6d. to 1s. 6d. per ton over other collieries as regards freight in taking the coal to market. This latter consideration is one which should weigh well with the shareholders when subscribing for the debentures, as, with such an advantage, there is little doubt that under good management the colliery, when properly opened up, will pay exceedingly well. Cakemore shares close at 2 to 2½. Pelsall Coal and Iron shares are offered at 3 to 5; Ebbw Vale at 18½ to 19½. Nant-y-Glo shares are also flat at 8 to 9, and Rhymney Coal at 20½ to 21½. Newport Abercarn close at 2½ to 3.

At the Truro Ticketing, on Thursday, 3447 tons of copper ore were sold, realising 13,665*l.* 0s. 6d. The particulars of the sale were—Average standard, 99*l.* 7s.; average produce, 6¾; average price per ton, 3*l.* 19s. 6d.; quantity of fine copper, 232 tons 19 cwts. The following are the particulars:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
June 21.	2650	£103 11 0	6½	£4 3 0	12s. 5½d	£62 4 0
July 5.	1713	99 0 0	7⅜	4 16 0	12 7	62 19 6
„ 19.	3447	99 7 0	6¾	3 19 6	11 11	59 10 6

Compared with the last sale, the decline has been in the standard 3*l.* 15s., and in the price per ton of ore about 4s.

The report of Nicholson's Discount Company recommends that half the profits should be placed to the reserve fund, and the balance, with the interim dividend paid in January, sufficed for a total distribution for the year ended 30th ult. of 9 per cent.

The Scottish American Investment Company have announced an interim dividend at the usual rate of 10 per cent. per annum for the past half-year, and over 6000*l.* is carried forward.

Petitions have been presented to the High Court of Justice for the winding-up of the Grosvenor Turkish Bath Company, Metal Tube Company, Sadler's Wells Skating Rink and Winter Garden, and the Hindley Cotton Spinning Company.

The Mercantile Trust Company of New York announce the establishment of an European Branch of their business in Lombard street, London, under the personal supervision of a member of their Board, Mr. George Edward Gouraud, as resident director, and the payment on Aug. 1 of the coupon then due upon the freehold mortgages guaranteed by them, by their London bankers, Messrs. Smith, Payne, and Smiths, and their Scotch bankers, the British Linen Company Bank, Edinburgh.

WEST TANKERVILLE.—The lode has been cut into at the 86, and is already worth 1½ ton of lead ore per fathom, and likely to improve.

PATELEY BRIDGE (Lead).—The 30 east, on Rake vein, is a course of ore, 3 ft. wide, nearly solid metal. All other points of former value. Dressing of ore is progressing rapidly.

CWM DWYFOR.—Lead has this week been met with the 20 fm. level, driving west of Stewart's shaft, and, as this level is advancing towards the point where the lode in the level above was rich, there appear to be good prospects of early success for this undertaking, especially having regard to its small issued share capital (about 100,000*l.*)

LEVANT MINE.—The novelty of sinking a submarine shaft has turned out here a success. A great proportion of the mine's entire success is got at by this means, and recently the lode has considerably improved, being worth it is said at the 240 fm. level fully 50*l.* per fathom for copper.

WHEAL OWLES.—The discovery at the 60 fm. level, in the Wheal Edward part of the mine, continues to improve in length and depth, and justifies the opinion that it is the top of a bunch. It is hoped that the protective call made at the last meeting will not all be required.

WEST SETON.—The sinking continues most satisfactory in the western part of the mine near the boundary of New Seton, where a great discovery of copper is almost certain to be met with.

WHEAL NEWTON.—The last sale of silver ore from this mine comprised nine parcels, weighing altogether 31 tons 5 cwts. 2 qrs. 23 lbs. dry weight, and realised 1186*l.* 12s. Four of these parcels, weighing 5 tons, realised 766*l.* 5s., thus giving an average value of 173*l.* per ton. One parcel, weighing over 7 cwts. realised the extraordinary price of 534*l.* 10s. per ton. We are also informed that silver ore valued at upwards of 2000*l.* additional has been broken since the 10th inst., and is now in preparation for shipment. A dividend is to be declared next week.

PARYS MOUNTAIN.—An extraordinary general meeting of shareholders is convened for the purpose of forming the Morfa-du portion of the sett into a new limited company, and from which company Capt. Mitchell already promises good dividends, it being very rich in bluestone for zinc, besides containing rich lodes of copper, thereby giving ample capital to the company. It is proposed to sell this sett for 5000*l.*, which can be at once placed to the credit of the Parys Mountain Mine. The present proprietary is too influential to permit this great mineral property to quietly slip out of their hands now that it is on the point of success. A meeting of the large shareholders has already been privately held under the auspices of the directors, at which it was unanimously resolved to carry out this arrangement, and it is not at all likely that money will not be freely subscribed to complete this great mining enterprise—the driving of the 90 cross-cut into the mass of ore above.

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Notices to Correspondents.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

SIR,—Will any of your readers kindly inform me whether a shareholder in a mine under the Cost Book can stay proceedings where it is proposed to reconstruct the company under the Limited Liability Act by entering a protest at the Stannary Court?—A. W.: *Tavistock, July* 19.

NORTH AMERICA GOLD.—The Mining and Scientific Press (a San Francisco paper) says—"The North America has been doing better for some time past than it had ever been known to do." Query: if such is the result during a dry season, as this one is, what must it be when water is in abundance? as has been the case for several seasons. Who is supposed to know anything reliable about this property?—SUBSCRIBER.

EXCHEQUER.—We must decline to open our columns to personalities; but any expression of opinion as to the mine and its management will continue to be published, provided the communications are of a *bona fide* character.

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with he country bookseller or their London agent.

IMPORTANT NOTICE—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the *Mining Journal* to many countries will be reduced to one fourth. Henceforth the subscription will be 1*l.* 10*s.* 4*d.* per annum (39 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxemburg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Servia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 1*l.* 19*s.* (50 frs.)

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AMERICAN SUBSCRIBERS.—In reply to several enquiries, it may be stated that subscribers in the United States can be supplied with the *Mining Journal* post free, at the price of $8 50c. gold per annum, payable in advance, by remitting to Mr. D. Van Nostrand, publisher, and importer of scientific books, &c., Murray-street, New York; or, direct to our Office, 26 Fleet-street, E.C.

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, JULY 21, 1877.

COAL-CUTTING MACHINERY.

Colliery owners and inventors of machinery are indebted to the Midland Institute of Mining Engineers for having appointed several of its members to visit various coal mines where coal-cutting machinery is at work, and report on the same. The committee has just terminated its labours, and we hope to be able shortly to give some of the results of the investigations made. The collieries visited were Platt-lane, where WINSTANLEY and BARKER's machine was at work, and the Atherton, near Manchester, where a similar one was in operation; the West York-shire, near Leeds, where for some years past the pick machine of the Messrs. FIRTH has been going almost continually; Wharncliffe Silkstone, near Barnsley, where GILLOTT and COPLEY's machine has been put down; and the Elsmere, belonging to the Hetton Coal Company, near Durham, where BAIRD and Co's machine has been working. It may be fairly assumed that the above machines, varying in many essentials as some of them do, may be looked upon as the principal ones we have that have been fully tested by constant working. This, however, is not saying much, considering the many machines patented and the number of years the subject of mechanical coal-cutters has been brought under the notice of colliery proprietors and the public. This slow progress may be attributed to the difficulty in producing a machine adapted to the working and thickness of seams of coal in different districts, and the unwillingness of colliery owners to go to a heavy expense in putting down machinery that might not be adapted to the cutting of different seams. But from what we have ourselves seen some of them do, in the West Riding of Yorkshire in particular, we certainly do not think there is any difficulty connected with them that might not be easily overcome, nor do we see any reason why they should not be generally adopted. As a matter of course the miners would be prejudiced against them, for they would not be in the position they now are with respect to striking were machines put to work in our collieries. Where the long wall system of getting is in force the machines can be adopted with advantage, and with compressed air as the power the working places would be much healthier, with greater safety as regards the ventilation and the maintaining of the roof. Another advantage appertaining to coal-cutting machinery relates to the small quantity of slack made. By the present hand method of cutting from 10 to 40 per cent. of slack was made, whilst an ordinary machine now working would not, in all probability, make half that quantity, so that the coal being brought out in large pieces would be of increased value.

Many of the machines now in use have been considerably improved during the last two or three years, and are not liable to some of the objections then raised against them by practical men, including some of the Inspectors. The opinion of several of the latter respecting them was taken about four years ago, and was more in favour of them than otherwise. Mr. DICKINSON believed that machines would increase, although they were not so handy to move about in the workings of a colliery as men were. In his district coal-cutting machines had been in use many years, the late Mr. PEASE and Lord BALCARRAS having had one upwards of 20 years ago, and they have been increasing in the thick seams. Mr. WARDELL (who had seen FIRTH'S and GILLOTT and COPLEY'S machines at work) considered that coal-cutters generally had scarcely arrived at that degree of perfection which would enable them to be practically used. But from what he had seen of them they appeared to do the work very well, but the principal difficulty appeared to be in moving them about—they were too cumbersome. Mr. EVANS, another Inspector, considered that a perfect machine would reduce the price of labour, and consequently the cost of the coal. Mr. TENNANT, M.P., a large colliery owner in the Leeds district, holds a similar opinion, and also considers that machines would have the effect of increasing the production of coal. Another high authority—Mr. LINDSAY WOOD—said he had had two coal-cutting machines (FIRTH'S) for ten years, and although the effect had not been to reduce the amount of manual labour to any appreciable extent, yet they produced more round coal per ton wrought, and were, consequently, a commercial success, although the colliery was not a favourable one for testing them. At the Hetton Colliery two pick machines were long in use, and the manager stated that they answered exceedingly well, being driven by compressed air. Another reason, in addition to those already given in favour of coal-cutting machines, is that, as in almost all our districts, we are sinking to greater depths than we have hitherto done, so that a larger quantity of air for ventilation will be required. The machines worked by compressed air could be made to aid in the ventilation very much, for the pure air from the surface could be discharged from a machine into the working places.

Coal-cutting machines, it may be said, have been made to cut horizontally and vertically. Cutting vertically by hand is most exhausting, causing the chest to be contracted, and it is said that a man who begins that description of work at 21 years of age is an old man at 30. Here, then, the machines can most advantageously be brought into operation, to the great benefit of the collier. As it is, we believe that the general introduction of machinery for getting coal is a question of time only, and that the improvements in the construction of them constantly going on will result in the production of mechanism that will leave nothing to be desired by our colliery proprietors in economically working their coal.

TRADE AND WAGES.

In connection with the question of the respective prospects of trade in America and in this country, an observation has been made in the New York Shipping and Commercial List which is well worthy the attention of the working men and their advisers in this country. Dull times, it is remarked, are to be looked for as a matter of course until towards the end of August, but a favourable Fall season is looked forward to, as the harvest prospects have rarely been more promising than they are now, while the improved financial condition of the country has in it a decided encouragement to the immediate future of business. In connection with the favourable prospects of industry and commerce there is no other circumstance, or combination of circumstances, so auspicious as the steady progress which American products, and especially manufactures, are making in competition with those of the rest of the world. In most of the leading articles which the Americans produce they have united cheapness and excellence in such an extraordinary degree that they are now in a position to withstand all foreign rivalry. England it is truly said has gone on selling goods at a loss or without profit rather than attempt to reduce the cost of production, expecting every year a revival of business, such as would again make her trade profitable. The last quarterly circular of an important British iron firm states that iron is from 45 to 50 per cent. lower than in 1872, while coal is 2*s.* a ton higher, and wages but slightly reduced. What is true of iron holds of most other departments of British industry, whilst in the United States both coal and wages, the leading elements in the cost of manufactures, have declined together, the former being at the lowest figure ever before known. With these advantages America will be able to press forward to renewed triumphs in commerce.

Now, there is no country in the world where the working man has greater power than in the United States, so that it may be assumed that the working men of America have already learned that low wages are absolutely necessary if foreign trade is secured, or even if foreign competition is to be successfully met at home. In this country not only do men receive higher wages than formerly but they do considerably less work in a given time, the result being that the proportion of fixed charges to wages constantly increases until at the present time the British producer is at a disadvantage with those of the same class in all other manufacturing countries. It is alike to the advantage of employers and employed that the wages scale should be generally and largely reduced, and until this be done there is little prospect of any permanent improvement in the position of our commercial affairs. These facts cannot be too strongly impressed upon the workers in all branches of trade, and the various delegates will render real and lasting services to their constituents by showing them that a general reduction is inevitable, but that as it will be general the position of the working classes as a body will be improved instead of injured.

COLLIERS' WAGES, AND THE PRICE OF COAL.

In an article under the above head, which appeared in a recent Journal, we gave some figures showing the advances and reductions of wages that had taken place in the various colliery districts, as prepared by Mr. JOHN ROWLEY, secretary to the West Yorkshire Coalowners' Association. We also gave the selling prices of coal at the different periods, seeing that the two were intimately connected. In our Supplement of July 7 "An Engineer" takes exception to the figures, and falls back on the old adage with respect to statistics being able to prove anything. This, no doubt, may hold good in some instances where the object is not by any means genuine or honest, but at the same time we should like to know how figures can be done without, for they are what all men in business, and working men as well, must resort to. There is, however, one mistake in the letter, for the Durham wages, according to Mr. ROWLEY, are now 10 per cent. higher than in 1871 (not 20 per cent.) "An Engineer," however, is not quite correct himself in some of his views, for he says that "the coalowner and the miner get by far the larger proportion of any advance got, for the simple reason that railway companies' rates are fixed by Act of Parliament." From this we are led to infer that the railways always charge the same price for the conveyance of coal. This is not so, although Parliament may have fixed a maximum rate. Thus we find that the coal rate by the Great Northern from South Yorkshire to London, including City dues, was in January, 1871, 6*s.* 7*d.* per ton, and in June of the same year, when the "battle of the rates" between that company and the Midland was being fought, the rate was only 4*s.* 11*d.* per ton. In January, 1876 the rate was 8*s.* 9*d*, and it is now 8*s.* 3*d.* per ton. This shows that there is no fixed rate whatever.

The information required by "An Engineer" as to the price of coal at different periods is not easily obtainable; but, according to Mr. COCKERELL, the highest authority in the metropolis, the highest selling price to the consumer, delivered in 1870, was 27*s.* per ton; in 1871 it was 29*s*; in 1872, 35*s.*; in February, 1873, 52*s.*; and at the close of the year 39*s*. The present selling price is 25*s.* per ton. As to the wages of hewers, Mr. PEASE said that in the pits belonging to his firm the average was 4*s.* 4½*d.*; in 1872 it was 6*s.* 3½*d.*; and in 1873 it had increased to 7*s.* 4½*d.* per ton; this was in addition to houses, gardens, and coal. A large quantity of the coal raised is made into coke, the price of which ran in 1870 from about 10*s.* to 12*s.* 6*d.* per ton; in 1871 the average was about 21*s*; and at the end of 1872 it increased from 12*s.* 6*d.* to 35*s.* per ton. As to the cost of conveying 1 ton of coal to the metropolis by the Great Northern from South Yorkshire, it is 8*s.* 3*d.*; then there is 1*s.* per ton for truck hire, which, with 5*s.* for terminals, profit, and conveyance to the cellars of the consumers, gives 14*s.* 3*d.* per ton. The price charged to the consumer for best Barnsley is from 20*s.* to 22*s.*, and Silkstone 22*s.* to 23*s.* These figures show what the price must be at the pits, and how small must be the profits (if any) of our colliery owners. We have endeavoured, so far as the means we have at hand to answer some of the queries of "An Engineer." Knowing, as we do, that there are many owners of coal mines who are working them at a positive loss, whilst colliery companies are falling to pieces almost daily.

SINKING THROUGH AQUEOUS STRATA WITHOUT PUMPING MACHINERY.

About four years ago a company was formed to work some mines discovered at Huntington, just beyond what had heretofore been regarded as the limit of the Cannock coal field, a "fault" intervening between Huntington and the West Cannock Company's colliery. The borings in search of coal showed that overlying the minerals were 120 yards of water-bearing strata, yielding such large volumes of water as to render sinking by the ordinary process a matter of extreme difficulty and enormous expense, yet as the area to be worked is large, and the mines are valuable, it was determined that the mines should not be abandoned, and that CHAUDRON'S system of sinking without pumping machinery should be tried. As this is the first place in England where this system has been introduced (though it has been since introduced at Whitby), the members of the Mining Institute of North Staffordshire, on Monday, visited Huntington to inspect the workings. It may be stated that CHAUDRON'S system is expensive, and for that reason is only recommended where large quantities of water are met with, but it is safe in operation, and certain in results. The operations are all carried on from the top of the pit, and no man descends till the shaft is finished. It was first requisite to erect sheds for engine, platforms, and other purposes, with a strongly-braced timber beam to which the tools are attached. The boring commenced in January last, but owing to breakage of tools, some of which were in the first instance made too brittle, much delay was occasioned, and up to the present time only about 80 yards has been done to the pit inspected. The difficulty as to tools has at length been overcome. The work began by suspending a small boring tool over the pit, then lowering it till the top end is level with the working platform. The manipulation of the ponderous tools (one of which, used on Monday, weighed 12½ tons) is a work of great ease, owing to the arrangements of the machinery. The apparatus is gradually increased in length as the work proceeds by timber rods fastened to each other by screws. The first boring is done with a smaller tool; for instance, the sinking is 19 ft. diameter, but a smaller tool is first used 6 or 7 ft. diameter, and this is continued 15 or 20 ft. ahead of the larger bore. Each time a blow is given labourers on the platform turn the tool round, so that every part of the working surface at the bottom is operated on. The next process after the boring is finished will be the tubbing. The cast iron rings or cylinders to be used for this purpose are being made on the premises, and some of them were shown to the visitors. Each ring, cast in one piece, has inside flanges top and bottom, and a parallel strengthening rib in the middle of their depth, and the flanges are so carefully turned as to render them absolutely parallel. As soon as the shaft shall be finished these rings are to be lowered one after another, the bottom one resting on solid stratum, the space between the other rings and the water-bearing strata being filled up with cement, the shaft thus being perfectly water-tight. Though, as we have stated, the sinking or boring is as much as 19 ft., the finished shaft will only be 15 ft. It should be explained that after the working drill has been employed the necessary time it is withdrawn. Then a spoon is lowered. The bottom of this huge iron vessel consists of flaps which open upwards when it is lowered to the bottom of the bore-hole by the aid of the engine, and the debris which is usually reduced to very fine bits—in fact, almost reduced to powder—enters. As the tool is withdrawn the flaps close, and 125 to 150 cubic feet of debris is brought up at one time. A second shaft is in progress. The members present expressed themselves favourably as to the Chaudron system.

RAILWAY IRON IN AUSTRALIA.

We have on more than one occasion called attention to the importance of the Australian demand for our railway iron—a demand which has rather materially assisted British ironmasters to tide over the admitted dulness of the times. We have not hesitated to congratulate the British iron trade upon the receipt of large Australian orders for railway *matériel*, but at the same time we have not been able to altogether shut our eyes to the fact that the continuance of these orders is to some extent contingent upon the development or otherwise of Australian metallurgical industry. There is no doubt that the Australians are by no means destitute of supplies of iron and coal, but the pastoral industry of Australasia being at present its great mainstay the full development of the Australian iron manufacture may not be witnessed for many years. It is impossible, of course, to affirm with confidence whether this will really be the case, but we may rest assured of one thing—that the very vigour with which the various Australian Governments are pursuing the work of railway development will stimulate the growth of the Australian demand for our railway iron almost as much as it has assisted of late years the consumption of British railway iron in the various members of the Australasian group of settlements. Mr. ENOCH HUGHES, who is now manager of the Esk Bank Ironworks, near Bowenfells, New South Wales, reports progress as to an experiment which he has made with a view to the utilisation of coal and ironstone discovered not very long since in the locality in question. With the assistance of a few friends Mr. HUGHES succeeded in erecting a blast furnace capable of producing 120 tons of pig-iron weekly. The foundation stone of the furnace was laid early in February, 1875, and the furnace was blown in in December of the same year. After working for eight weeks, and producing 500 tons of pig iron of excellent quality, Mr. HUGHES found that there was not a sufficient market for the pig; he accordingly commenced the erection of rolling mills, which he expects to complete before the close of the summer.

By way of illustrating and guaranteeing the quality of the pig-iron made at the Esk Bank Works, Mr. HUGHES has also erected a foundry, and he has been making the whole of the castings required both for the furnaces and rolling-mills. At the last advices from New South Wales Mr. HUGHES had six puddling furnaces ready for work, one scrap furnace, two mill furnaces, a NASMYTH'S hammer, and one 18-in. train of rolls, with shears complete. The works are situated 95 miles from Sydney, on the Great Western Railway of New South Wales, which runs through the property. The estate consists of 700 acres, upon which is a 10 ft. seam of coal cropping out on the surface, fire-clay, and iron ore (argillaceous and hematite) is also obtained on the same land, and limestone in abundance at a distance of 12 miles from the works by railway. It is, however, of importance to note that Mr. HUGHES makes an admission that he has one rather serious difficulty to contend with in the want of more skilled labour. The sum which is now paid at the Esk Bank Works for puddling is 18*s.* per ton; labour in other departments of the iron manufacture is also remunerated in a corresponding liberal fashion, but still Mr. HUGHES requires more skilled workmen. Another experiment which has been made in the manufacture of iron in New South Wales has also been attended with serious difficulties. Some years since an undertaking was inaugurated under the title of the Fitzroy Ironworks. This establishment, which is situated at a distance of 76 miles from Sydney, near the Great Southern Railway of New South Wales, is now standing idle, in consequence of its having been found impossible to obtain coal at a sufficiently cheap rate. We thus arrive at the fact that at present the manufacture of iron at the Antipodes is attended with very considerable difficulties, notwithstanding the existence of many natural advantages.

COAL-CUTTING MACHINERY.—A committee of the members of the Midland Institute of Mining Engineers, which was appointed a year or more ago to visit the various colliery districts, and inspect and report upon the coal-cutting machines at work, and their adaptability for getting coal, laid its report before the annual meeting of that body, which was held at Barnsley, on Wednesday last. The report, which will be printed in the Transactions of the Institute, shows that the committee visited the following collieries, and inspected the machines there at work:—Winstanley and Barker's machine, at the Platt Lane Colliery, belonging to the Wigan and Whiston Coal Company, (Limited), and the Atherton Colliery, near Manchester; Firth's machines, at work at the collieries belonging to the West Yorkshire Coal and Iron Company; Messrs. Gillott and Copley's machine, at work at the Wharncliffe Silkstone Colliery, near Barnsley; and Messrs. Beard and Co.'s machine, at work at the Elemore Colliery, belonging to the Hetton Coal Company, near Durham. As the question is one of great interest to coalowners and the mining community generally, the report of the committee will be anxiously looked for.

STEEL RAILS.—Of a total of 195,550 tons of rails exported during the last six months 106,253 tons were steel rails; whereas of 150,067 tons exported during the first six months of last year only 17,637 tons were steel rails.

COAL AND IRON IN THE UNITED STATES.—A fair demand has prevailed at Pittsburgh for tool and machinery steel, although the enquiry has been principally for small lots. Plough steel has remained quiet; the chief cause of complaint has been in regard to prices, which have been unremunerative. An improvement in business is anticipated next month. There has been rather more doing in old rails at Philadelphia owing to a demand to meet immediate necessities. Sales have been made in small lots aggregating about 1000 tons at prices ranging from $20 to $21 per ton, according to quality. There is rather a better feeling, but it would be difficult to place any considerable quantity upon the market without influencing quotations adversely. Coal is still too cheap in Pennsylvania to be doing any good to anyone connected with the trade; miners, operators, carriers, and dealers are alike suffering. In some localities miners are said to be kept at work because it costs a certain amount of money to stop working operations, but some

lookers-on estimate that the losses on sales now being made in order "to keep customers" are more than the losses which would attend the keeping of mines actually idle.

REPORT FROM CORNWALL.

July 19.—Dulness decidedly continues to be the chief characteristic in all matters connected with Cornish mining; and the excitement caused by the financial revelations at West Basset has apparently died away, though it certainly has left results behind. The first effect of the disclosures was, of course, to depreciate the mine itself; the next to make people suspicious—and in many cases unduly suspicious—of the condition of other concerns. Now that it may be supposed that we know substantially all that we are likely to know about the existence of bankers' debts—at any rate, so far as our more important mines are concerned—and confidence, therefore, has to some extent been restored, there still remains behind in the minds of many adventurers at a distance an uneasy kind of feeling, which is not at all calculated to make that lively which was already depressed. Nobody can feel safe while there is the possibility of such a disgreeable kind of a mine being sprung under their very feet; however, the present exposure is likely to prevent such blunders being made elsewhere, and since the whole question has now been pretty well thrashed out we may drop it, with the simple additional comment that however good one's intentions may be it is always best to be perfectly straightforward in the carrying of them out.

Sir Daniel Gooch, Mr. Grierson, and others of the Great Western authorities have visited Cornwall this week for the purpose of inspecting their newly acquired piece of property—the Cornwall Minerals Railway—which stretches across the county, completing the design of the late Mr. J. T. Treffry, from Fowey to Newquay, and intersecting nine of the most important portions of the china-clay district. There was an idea that the Cornwall Minerals system would form a link for the advance of the narrow guage into Cornwall, and a most important one it would have been, but this, of course, is now at an end. The railway is splendidly made; in fact, too well made, for it cost a lot of money in the construction, though there will certainly be an important set off in the maintenance charges. It had diverted a large portion of the china-clay trade from the Cornwall line, so that its acquisition is a matter of considerable importance to the Great Western Company, who are the Cornwall lessees. It is said that the Great Western intend to carry out other works of improvement in the county, of the railways of which, with the exception of the little Bodmin and Wadebridge line, they have now the sole control.

One of the lectures delivered in connection with the meeting of the British Association at Plymouth will be on a subject specially interesting to a mining community, and by a well-known mining authority—Mr. Warington Smyth, F.R.S. He will lecture on Friday, Aug. 17, at the Guildhall, upon "The Physical Phenomena connected with the Mines of Cornwall and Devon." A good deal of interest has been manifested by intending visitors in the various forms of special industry for which Cornwall is distinguished, and extended arrangements are, therefore, being made for inspecting them. It seems probable that there will be a good number of local papers dealing with the science and industries of the district, and the meeting bids fair, if not brilliant, on which it is too early yet to pronounce, to be of a very practically useful character.

Dr. Foster continues his raid against the owners of unprotected mine shafts, and this week Sir R. R. Vyvyan has been fined. There appeared to have been an oversight, arising from a mistake as to responsibility.

A curious illustration of the after dangers that sometimes attend mining enterprise has been supplied at Camborne. The drills of the Falmouth Volunteer Corps have hitherto taken place at Wheal Gerry Barracks, a little way north of the town—a site enclosed and reclaimed from old mine burrows by the late Major Bickford. The sub-soil was consequently perforated with workings, but no apprehensions of danger were entertained, for on Friday night the corps met as usual, and Major Pike attended the drill, and at its conclusion took leave of them as their old captain. The corps left the parade ground in its normal condition, but next morning it was found that during the night the land, to the extent of 100 ft. in circumference, had "run into" the 110 fathom working below it. There can be no doubt that the measured tramp of the men had much to do with this slip, and had it happened a few hours earlier some at least must have been buried alive. It is presumed that when the shafts were closed they were covered in with wool instead of being built over with stone.

REPORT FROM THE NORTH OF ENGLAND.

July 19.—In spite of all the anticipations and omens that were expected to lead the trade of Cleveland to a better frame of being, the depression that has so long hovered over the pig-iron industry is as black and unbroken as ever, and the proverbial silver lining in the clouds is as much invisible as ever. Everything is cheerless, hopeless, and discouraging. Pig-iron makers, after having succeeded with much worry and trouble in getting the cost of production nearly adjusted to selling price, so that they had good reason to hope for a better commercial return than they have been able to command for the last six or seven months, have again been compelled to make concessions to consumers, involving a loss almost equal to all the advantage they have gained from recent reductions of wages. Many makers have struggled hard against any further abatement of prices. But the exigencies of the more needy and incapable have compelled their firmness to give way, and the result has been that rates have been lowered all round to the extent of fully 1s. per ton within the last fortnight, fully 6d. of this abatement having been conceded at last Tuesday's market, when No. 3 was quoted at 41s., and No. 4 forge at 39s. per ton. Makers are still throwing a very large quantity of iron upon the market, and it really looks as if the only feasible remedy for the existing depression, and more particularly for the downward tendency of prices, were that of limiting production in some systematic manner, such as is not unfrequently adopted on the other side of the Atlantic under similar circumstances.

The Norton Iron Company, whose works are situated near Stockton-on-Tees, and the Stockton Furnace Company, have this week blown out their furnaces. On the other hand, the firm of Bolckow, Vaughan, and Co. have blown in another furnace at their New Eston Works, which will help to compensate for the diminished make. There is not, however, much reason to doubt that the output of pig-iron for the month of July will be less than that of any of the six preceding months.

In the Cleveland ironstone mining district dulness is more than ever the order of the day. The Stanghow and Kilton Mines are still inoperative, and several other mines are working restricted time. Mr. William Barningham is proceeding with the development of his new mine near Guisborough, and expects to be getting a good supply of stone out in the course of a few months. Some of the development that was undertaken or projected a year or eighteen months ago has been temporarily abandoned. It is felt, indeed, that the already available resources of the ironstone mines are equal to meeting a much greater tax than any likely to be made for the next few years, seeing that they produced over 6½ million tons of stone last year, with a number of the mines working short time, and others entirely idle. It looks, indeed, as if the district had within the last two or three years proceeded at too rapid a pace. Large stocks of iron ore are being stacked at many of the principal mines, some firms having 50,000 to 100,000 tons of ore at the pit-head. Until these are worked off, it is not probable that any further expansion will be attempted.

So far as the finished iron trade is concerned there is necessarily a good deal of uncertainty attaching to the result of the arbitration that has this week been in progress relative to the claim of 10 per cent reduction in ironworker's wages. This matter came before Mr. David Dale, as sole arbitrator, at Darlington, on Monday, when very elaborate pleadings were made on behalf of both employers and employed. The former based their claim for a 10 per cent. reduction of wages on the generally depressed state of the iron trade, and especially on the fact that since the last reduction of 7½ per cent. was awarded, in January of last year, there had been a drop of 1*l.* 0s. 3d. in the average realised selling price of iron in the North of England. The men, on the other hand, argued that the trade was not so depressed as the masters represented, except in rail making, which was now dead, owing to the substitution of steel for iron; that in other branches there had been a positive increase of quantities; and that the reduction of selling price shown by the employers was fully made up by the reduced cost of production, pig-iron having fallen 10s. per ton, coals 1s. per ton, and wages 7½ per cent. since January of last year. The men threatened that another reduction would cause them to rebel, and thus jeopardise the existence of the Board. Mr. Dale took time to consider his decision, which will probably be issued next week. Upon the result arrived at in the North of England it is probable that the wages of ironworkers in Staffordshire will be varied in the time to come.

The prices now being quoted for finished iron are lower than those recently current. I happen to know that contracts for 20,000 tons of rails have recently been accepted in the Cleveland district at 5*l.* 15s. 6d. per ton, which is about 4s. to 6s. per ton less than the rates current during the previous quarter.

The mineral traffic of the Durham and Northumberland coal field remains pretty steady. During the present week the pits of Durham have been idle a whole day because of the annual political demonstration of the miners, which came off last Monday. Coke is pretty firm, but scarcely so much enquired after. In other kinds of fuel there is no real alteration.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

July 19.—I am unable to report that the Quarterly Meetings have resulted in any conspicuous accession of orders at the mills and forges. And makers assert that this would still be the case if they were to follow the lead of the Monmoor Iron Company, and drop prices 10s. per ton. Under these circumstances, quotations for the finished product, with the exception noted, remain pretty much as they were before the quarterly meetings came off, and the almost unprecedented difference between 9*l.* as the price for marked bars and 6*l.* 10s. and 6*l.* 12s. 6d. for common bars continues. Neither has the reduction of 10s. on cold-blast and 5s. on hot-blast pig-iron by Shropshire and Staffordshire makers greatly increased the business doing at the furnaces. Still, here and there purchases have been stimulated. Ironmasters, however, continue to make arrangements for the blowing-out of furnaces; 2*l.* 5s., and now and then even less money, is being taken for cinder pigs. The amount of coal going into consumption is not larger than it was a week ago. Some forge coal is difficult to sell at 7s. 6d. Furnace is still quoted 11s. by the Earl of Dudley. It is noteworthy that in February, 1873, this commodity stood at 17s., that later on in the same year it commanded 19s., and that in 1874 it fell to 16s. per ton, and since that time it has been steadily declining.

A good deal of speculation exists just now amongst colliery owners as to what new arrangement will be made with the colliers when, at the end of August, the six months' notice given by the Masters' Association for the termination of "the Birmingham agreement" expires. That a reduction in wages will be tried is unlikely, seeing that it is calculated that during the present depression the men's weekly wages do not average more than 12s. or 14s. Wages of the Thick coal men now stand at 3s. 6d., and of the Thin coal men at 2s. 9d. per "day," which is lower than at any period within the last 13 years. But it must be remembered that the hours are now reduced to eight, as compared with eleven, which constituted a working day prior to 1872. It was on July 1, 1872, that the eight-hours system came into operation; and it must be in the lengthening of hours that the masters will seek relief in the new arrangement.

Since my last the old shares of the Sandwell Park Colliery have sold respectively at 7*l.* 10s., 7*l.* 15s., and 8*l.* premium, and "fraction thirds" of the new shares have changed hands at 1*l.*, and 1*l.* 5s. prem. Nearly all other colliery shares are at a discount. The Hamstead property is at 4 dis., the Cannock and Huntington at 3½ dis., the Cannock Lodge at ½ dis., the Spon Lane at 6 dis., and that of the Pelsall Coal and Iron Company at 11½ dis.

The arbitrators under the Mines Drainage Act officially announce that they have made a draft award for a rate in the Old Hill district, and also an award in triplicate for a rate in the Oldbury district. Touching the first district, any person affected can appeal to the Commissioners within two months, but as to the second locality the award is binding alike upon the Commissioners and upon colliery proprietors. I may mention that the annual meeting of the Commissioners has been fixed for the 1st of next month in Wolverhampton.

The North Staffordshire Iron Trade has been no more benefited by the Quarterly Meetings than has the trade of the south part of the county. The orders received are not sufficient to keep the mills and forges on an average of half time. The output of coal, though small, is more than sufficient to meet the district's necessities.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

July 19.—The position of the Iron Trade remains unchanged so far as prices are concerned, but the enhanced activity noticeable at many of the local works continues. Clearances are up to the average. Very few fresh orders have come to hand of late, and when present orders are exhausted ironmasters will be rather unwilling to enter into new engagements at the present low quotations, unless they can manage to decrease the cost of production by a reduction in wages or some other means. It is believed that money has been dropped over recent orders, masters in some instances being inclined to do so rather than close their establishments entirely. There is a fair amount of activity observable at the steelworks, and the Bessemer works at Rhymney are proceeding rapidly to completion. Iron rails are in rather less request, and stocks of pig are accumulating at many of the establishments. The bar-iron department continues to exhibit a little more activity. Clearances during the week have been mainly to the East, Brazil, Sweden, and Portugal. At the tin-plate works two weeks out of three is the present rate of employment, but during this time the men are fairly well employed. This restriction, and the fact of several works, principally in Monmouthshire, being closed, have as yet had but little effect in improving prices, which remain at a low ebb.

With regard to the Coal Trade, increasing dulness is observable. Orders for foreign stations are the reverse of plentiful, and exports show a slight decrease. General complaints are made as to the aspect of affairs. Freights exhibit a downward tendency. Reports from various parts of the district show that the collieries are, as a rule, fairly well employed, and the output is still considerable. The demand for steam qualities shows a decline to a slight extent; the house coal trade is rather depressed, but although shipments of patent fuel show an increase many of the works are but indifferently employed. Nothing fresh has transpired with regard to the Aberdare and Plymouth colliers, and it is feared that at the end of the month they will be condemned to enforced idleness. The double-shift system of working which had been introduced at the Letty Shenkin Colliery, Aberdare Valley, has been abandoned, and the old plan again resorted to. Sinking operations at the Darran pits, Tredegar, rather unexpectedly have been stopped.

Messrs. Routh, Kirk, and Co., Leeds, have been re-appointed by the Sliding Scale Committee as accountants to go through the masters' books, in order to ascertain the average selling prices of coal during the six months ending June 30.

It is by no means pleasant to find that some amount of dissatisfaction has been caused at the apportionment of the rewards to those who aided in the rescue of the entombed miners at Tynewydd Pit. A meeting of colliery managers who had charge of the rescuing parties has been held, and five of them have signed a protest against the list of awards, which they allege was drawn up on the report of the Rev. D. W. Williams, of Fairfield. In this document which was forwarded to the Lord Mayor and Mansion House Committee, they decline to accept the rewards as proposed in the list. The Lord Mayor, in reply, states that the list drawn up by Mr. Williams was not made the standard of adjustment, and under the circumstances his lordship has replied that he takes the determination of these gentlemen as final. Great disappointment is now felt throughout the district, it being understood that in consequence of this disagreement the Lord Mayor has decided to abandon his intention of personally presenting the awards, as the inhabitants were anxious to give him a hearty Welsh welcome. It is to be hoped that some arrangement will be made by which the matter may be satisfactorily settled, and that the intended honour to Welsh heroism may not be lost. Mr. W. Davies, manager of Coedcae Colliery, writes—"I find my name in a list of managers and colliery proprietors as having joined in a protest against the decision arrived at by the Mansion House Committee with reference to the distribution of the above fund. I beg to state that I never signed the protest, or gave any authority whatever for my signature to be appended."

An attempt made to form a Miners' Union for this district has as yet proved utterly futile. At a meeting held at Aberaman a few days ago so few persons were present that it had to be adjourned.

The adjourned inquest on the body of a man killed by an explosion of gas at the Tunnel Pit, the property of the Aberdare and Plymouth Company, has been resumed and again put off. The gas is believed to have been fired by a naked light.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

July 19.—In the lead mining districts business goes on much as usual, the output of lead being considerably less than what might be expected from the number of mines. But for some years past the production has been declining, so that the quantity of ore raised is not much more than half what it was a few years ago. Coal mining, however, is in a very different position, for the productive power of the county has increased immensely during the past six or seven years, and the same thing is still going on by the sinking of new collieries, but where the coal is to go is a question that few care to consider. At present the result is that very many collieries are now working short time, whilst at others the men have thought the time opportune for striking. As is usual at this time of the year, the demand for house coal is very moderate, and there has been a falling off in the tonnage going to London, consumers not appearing to act on the good advice of storing their cellars for winter consumption during the summer, when prices are lowest. Just now, it may be said, prices are very low, and how some collieries working thin seams of coal can be made to pay it is not easy to make out. At one or two collieries the men are still out, but at Mapperley some of the old hands have returned to work. In the iron trade there has been nothing new during the week, either as regards pig or manufactured iron, production of both going on much as usual.

A little more briskness is observable in one or two branches of the Sheffield trade, but most others are still very quiet. The armour-plate mills are not doing much, and have been in that state for some time, whilst the sheet mills are favourably off for work. Most of the makers of Bessemer rails are working tolerably well, all things considered, but there has been no improvement with respect to crucible steel. Makers of malleable iron and casting have been favourably off for business for some time past, whilst the ordinary foundries, though by no means busy as a rule, have been able to keep their men fully going. In general cutlery there has been no change, and many men are still on short time. The collieries in the district are not working so very well, unless it is those who are principally raising steam sorts where such can be done. But the fact is there are too many collieries as well as too many colliers, for when prices of coal were so very high those who had money went in for coal pits, whilst ordinary labourers, owing to the high wages paid to miners, enlisted into that body. They now, however, find that they are not in a better position than they were when engaged at their previous employment, and their position is not likely to improve just at present, if it does at all during the present year. This can only be accomplished by a marked revival of the iron trade, of which there are no signs.

In that part of South Yorkshire situate between Masborough and Rotherham, and where there are some of the largest collieries in the West Riding, neither the Iron nor the Coal Trades are looking healthy. There are some furnaces in blast, but the demand for pig is still very moderate, whilst the local consumption is not at all so large as it has been. Shipments of steam coal from the Humber ports have been very large of late, more particularly to the North of Europe, but there is not much doing in households, so that the pits are by no means fully employed.

At the Dodworth Silkstone Colliery, near Barnsley, where the men at one of the pits have been on strike for several weeks, notice has been given to all the men that their services will not be required after the usual period agreed upon. It is believed that the notices have been given with a view to a reduction of wages, owing to the quiet trade and the low price at which coal has to be sold.

Mons. Worms, one of the largest, if not the very largest, of our continental coal merchants, died recently at Paris. He was a large shipper of coal from the West Riding of Yorkshire, and was also partner in the Mitchell's Main Colliery, near to Barnsley, which he visited about a couple of years ago on the occasion of celebrating the winning of the coal.

A case of considerable interest to colliery owners and managers was heard on Saturday at Nottingham, before Mr. Milward and Mr. Heymann. Mr. William Hall, the owner and manager of the Lodge Colliery, Newthorpe, was charged with working the pit with only one shaft on May 8 last. Mr. Leech, of Derby, instructed by Mr. Thomas Evans, her Majesty's Inspector of Mines for the Midland district, appeared for the prosecution; Mr. D. W. Heath (Messrs. Heath and Son) for defendant. The charge was that the defendant was working the coal with only one shaft, contrary to the statute. He was at the time sinking another shaft, but it would take three or four months to complete it. The defence was that the work done was merely proving a stratum of coal, but the magistrates did not accept this view, and fined the defendant in the full penalty of 20*l.* It was intimated that the decision would be appealed against.

THE LANCASHIRE COAL TRADE.—The strike of the West Lancashire colliers has terminated, and the men have resumed work on the masters' terms. The men have been idle nearly seven weeks, and during that time the Union men have received only two instalments of strike pay, each being 10s. per man, and 1s. for each child. The strike has really had no effect upon the market. Ordinary supplies, with the exception of engine classes of fuel, continue in excess of the demand, and trade generally is extremely dull. In the Manchester market prices, so far as the leading firms are concerned, are tolerably steady, but generally throughout Lancashire there is a good deal of low selling, and coal can be obtained for less money than was being obtained before the strike commenced. Yorkshire and Derbyshire firms are competing here very keenly, and in the outside districts Lancashire colliery proprietors find it very difficult to secure orders. The better classes of round coal meet with very little enquiry, and are plentiful in the market; for good Arley coal at the pit mouth not more than from 10s. to 10s. 6d. per ton is being obtained, and Pemberton Four-feet is offered at from 8s. to 8s. 6d. per ton at the pit. For common coal there is a moderate enquiry, but no fresh orders, and prices range from 6s. 6d. to 7s. 6d, per ton at the pit. Engine classes of fuel still meet with a ready sale. Although the common sorts of burgy are being pushed on the market, the better qualities meet with a ready sale at late rates, the pit prices remaining at 5s. 6d. to 6s. per ton; and good slack continues firm at from 4s. 6d. to 5s. 3d. per ton at the pit. There are some enquiries for gas coal in the market, but consumers are still holding back their contracts in the expectation of lower prices, and there is very little buying at present. The shipping trade continues dull. Lancashire colliery proprietors being to a great extent kept out of the market by the low prices at which coal is offered in other quarters.

Sergius Kern, of St. Petersburg, writes to the Chemical News from the Obouchoff Steel Works, that, in June, he discovered a new metal in the platinum group, which appears to occupy a place

between molybdenum and ruthenium. The discoverer proposed to name this new metal "Davyum," after Sir Humphry Davy.

HOLLOW-BOSSED CORVE WHEELS.

With a view to dispense with the labour, expense, and delay of the present system of lubricating wheels and axles, as also to entirely obviate all risk of accident or injury arising from the negligent or inefficient performance of this important duty, Mr. ROBERT HADFIELD, of Southampton Buildings, proposes to cast a wheel of any suitable size and material with a hollow boss or nave instead of a solid one, as has hitherto been done. Such hollow boss or nave is provided with a suitable hole or orifice therein, so as to permit of the hollow chamber formed therein being filled with oil or any other suitable lubricant; and he closes such hole or orifice by means of a screw-plug or other suitable device. The hollow chamber when so filled with lubricating material becomes a reservoir, and by this means as the axle or shaft revolves in the axle hole it is kept constantly and perfectly lubricated by means of the oil or other suitable lubricant contained in such hollow chamber or reservoir.

To prevent all risk of leakage and unnecessary waste of oil he prefers that the lubricant should not be too highly liquified, while on the other hand care must be taken that it be not made too thick in consistency, so as to avoid all chance of its setting, and so becoming useless. To ensure the axle or shaft being securely kept in position he takes care when casting such hollow boss to form a broad bearing on the interior of each of the centre holes formed in either side for the reception of such axle or shaft. Such bearings, however, are not united together, but a suitable and convenient distance is left between them to allow of the lubricating material coming in contact with the axle or shaft as it revolves.

By the use of his improved hollow bossed self-lubricating wheel a large degree of security, convenience, and economy is, in Mr. Hadfield's opinion, obtained, as it is thus rendered impossible that any accident can happen from insufficient lubrication, while the hollow chamber or reservoirs when once properly filled will last from three to four months, or even for a much longer period, such period being materially regulated by the amount and quality of the traffic which the vehicle has to perform. In order to re-fill the hollow chamber or reservoir when the lubricating material therein is becoming exhausted it is only necessary to remove the screw-nut from the before-mentioned hole or orifice formed, as already described, for this purpose in such hollow boss, thereby avoiding all necessity of unfastening or otherwise disturbing the axles and wheels.

HYDRAULIC MACHINERY FOR BORING ROCK.

In connection with the boring or working of rock some improved hydraulic machinery has been invented by Mr. ALFRED BRANDT, of Hamburg, who proposes to use hydraulic power for pressing a toothed steel boring tube into the rock, and for simultaneously rotating the said tool. The waste water passing from the engine is used for keeping the cutting edges of the boring tool constantly cool, and for removing the abrading material resulting from the boring. A firm abutment for the boring engine is formed by a hydraulic press consisting of a hydraulic cylinder and piston forced by hydraulic pressure against the sides of the rock or other material. The boring tool is formed of a slightly conical tube of steel, provided at its cutting end with teeth which perform the boring operation and are hardened for this purpose. In the other end of this boring tool a screw thread is cut which serves for connecting the said tool with a tube forming the hollow boring rod. The entire boring rod is composed of a number of such tubes fitted together by bayonet joints. Each tube is of about the length to which the boring engine works. The number of tubes to be used depends upon the depth of the hole to be bored, and one great advantage of the invention is that the depth may be almost unlimited, as the boring rod has only to resist torsional strain, and can, therefore, be made of great length. By means of a movable cylinder working on a fixed piston the pressure against the boring rod is effected; this pressure cylinder moves towards the rock when water under pressure is admitted into it, and returns when the water is allowed to escape. The fixed piston is screwed to the cylinder of a hydraulic press, forming a most firm and solid stand; this hydraulic stand must be regarded as a substantial part of these improvements, as without it there would be much difficulty in obtaining a suitable abutment. The rotation of the boring tool is effected by a very simple arrangement. On two guide pieces are arranged two hydraulic engines coupled together and serving to rotate a shaft which by suitable gearing communicates its motion to the pressure cylinder. The water under pressure is conducted to the machinery by three pipes. The largest of these pipes is composed of pieces provided with joints and ends in a valve supplying the two hydraulic engines with the requisites motive fluid; another pipe entering into the fixed piston supplies the water requisite for moving the pressure cylinder to and fro; the third pipe conducts into the stand the water requisite for forcing out the pressure piston. These three pipes branch out of a single pipe near the boring machinery. The waste water from the hydraulic engines takes its way through short pipes leading into the hollow piston through a tube, and then through the hollow boring rod, escaping finally through the crumbled core and the interstices of the cutting edge of the boring tool, thus constantly carrying off the abraded material. The machine may be calculated to be used with an average water pressure of fifty atmospheres, and the borer may make ten rotations per minute; but these particulars may be varied without departing from the substance of the invention.

GILBERT V. ENDEAN.—This suit, which has occupied the Court of Vice-Chancellor Malins for several days, was brought to a termination on Monday. The bill was filed by the plaintiff, who is a plater at Birmingham, against the defendants, who are stock and share dealers in London. It prayed to set aside the sales of certain shares in the Bampfylde Copper Mining Company (Limited) and the Llanrwst Lead Mining Company (Limited), and that the defendant should repay the plaintiff 781*l.* 15s., with interest, on the ground of misrepresentation as to the value of the shares. Plaintiff's case was that the defendants sold him shares which were their own property, whereas he thought they were acting for him as brokers, and dealing for him with the shares of other people. Mr. Glasse, Q.C., and with him Mr Grosvenor Woods, represented the plaintiff; and Mr. Powell Q.C., with whom was Mr. Napier Higgins, Q.C., Mr. Cooper Willis, and Mr. Whitehorne for the defendants. The defence was that the shares were of the full value represented, and that their depreciation in the market was the effect of the depressed state of the iron and metal market. The case had occupied four days, and on its being called on again on Monday it was announced that a compromise had been effected. The defendants were so satisfied of the value of the mines that they had agreed to take back the shares and repay the money paid for them, with interest, and upon those and some other minor terms the bill was dismissed.

MINES REGULATION ACT.—A public investigation concerning the conduct of Mr. F. Southall, certificated manager of the Park Hall Colliery, Cheadle, the scene of a fatal explosion, was concluded at Stoke-upon-Trent, on Tuesday. It was the first enquiry of the kind directed by the Home Secretary under the Mines Regulation Act, 1872, the Commissioner appointed being Mr. Headlam, stipendiary magistrate for Manchester, with Mr. Joseph Dickinson, Government Inspector of Mines, as assessor. In February the Woodhead seam (a new mine) was being worked with only one shaft, a second shaft being in course of sinking. The Woodhead seam is recognised as a non-fiery seam, but some gas was discovered on the afternoon of Feb. 19. Mr. Southall directed Thomas Birt, the fireman, to see to the safety of the workpeople. On the morning of the 20th Birt descended the pit with a number of other men, and after leaving them a few minutes he returned and directed them to proceed to their work. As they were going to work, taking with them naked lights, as was usual in this mine, an explosion occurred, injuring six men, one of whom afterwards died. The coroner's jury returned a verdict of "Accidental Death." Subsequently the Home Secretary directed magisterial proceedings against Mr. Southall and Birt. For not causing adequate ventilation to render harmless noxious gases Mr. Southall was fined by the magistrates 10*l.* and costs; for working with only shaft, 5*l.* and costs; and in four other charges of infringing the Act he was fined 1*l.* for each offence. Birt was fined 3*l.* and costs; he has since left the district. Mr. Headlam, in delivering judgment, said he considered that the defendant had committed an error in working the mine so far as he did with only a single shaft; that he relied too much on Birt with reference to the ventilation; but that, after the testimony as to defendant's character and competency, he (Mr. Headlam) did not feel called upon to cancel or suspend his certificate.

SALES OF COPPER ORES.

COPPER ORES SOLD AT THE CORNWALL TICKETING, FOR THE QUARTER ENDING JUNE 24, 1877.

Mine.	Tons.	Amount.
Devon Great Consols	2543	£9,449 10 0
South Caradon	1410	9,328 5 0
Marke Valley	1100	3,871 12 0
West Seton	832	3,767 4 6
West Tolgus	600	3,674 6 0
West Tolgus	406	2,589 4 6
Mellanear	601	2,260 16 6
Glasgow Caradon	490	2,057 5 0
Gunnislake (Clitters)	310	1,778 19 0
East Pool	446	1,464 17 0
South Crofty	450	1,351 10 6
Hingston Down	479	1,334 3 0
Phœnix	270	1,226 0 0
East Caradon	220	1,083 19 0
Wheal Basset	176	1,015 4 6
Levant	127	989 13 6
Gawton	404	867 6 6
Brookwood	190	817 1 6
Wheal Courtenay	137	693 14 6
Killifreth	80	590 2 6
Wheal Crebor	188	548 16 0
Bedford United	115	462 17 6
East Caradon	110	434 2 0
West Poldice	82	391 12 0
Carn Brea	130	389 13 6
West Basset	92	372 18 0
West Maria and Fortescue	110	338 10 0
Botallack	36	323 0 0
Penstruthal	60	275 8 0
South Carn Brea	69	272 5 6
Belstone	33	239 5 0
Prince of Wales	71	217 11 6
North Treskerby	35	204 15 0
North Wheal Busy	43	181 0 0
Wheal Russell	66	171 12 0
Champion's Ore	44	170 10 0
Cathedral	47	140 0 6
Unity Wood	22	1 6 10 0
Wheal Comford	21	113 18 6
New Cook's Kitchen	25	110 0 0
Wheal Emma	30	86 5 0
North Levant	12	83 2 0
Wheal Grenville	6	63 3 0
New St. Agnes	7	41 16 6
Pednandrea	7	37 12 6
Wheal Fancy	3	20 14 0
Cocking's Ore	10	18 15 0
Crenver and Abraham	9	14 8 0
East Basset	7	11 11 0
Wheal Seton	4	11 0 0
Willoughby's Ore	4	10 14 0
South Tolcarne	4	7 4 0

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Purchasers.	Tons.	Amount.
Vivian and Sons	2510	£11,983 10 1
P. Grenfell and Sons	2029	11,306 6 2
Nevill, Druce, and Co.	1904	7,873 0 10
Williams, Foster, and Co.	1811	6,466 19 2
Mason and Elkington	1623	6,228 2 5
Charles Lambert and Co.	1756	8,219 16 0
Sweetland and Co.	1370	4,963 14 10
Total	13013	£57,041 9 6

COPPER ORES SOLD AT THE SWANSEA TICKETINGS, FOR THE QUARTER ENDING JUNE 24, 1877.

Mines.	Tons.	Amount.
BRITISH.		
Berchaven	992	£ 5,826 0 6
Knockmahon	628	3,596 18 6
Cronebane	1054	1,266 17 0
Tigrony	26	821 12 0
Tan-y-Bwlch	37	501 7 6
Ballycummisk	31	159 13 0
Emily Ore	81	137 0 0
Coosheen	9	72 9 0
Total	2858	£12,381 17 6
COLONIAL.		
Cape	1893	£38,742 16 0
Moonta	1079	19,762 12 6
Betts' Cove	360	2,075 2 0
Kurilla	108	1,318 12 6
Australian	59	587 15 0
Total	3499	£62,486 18 0
FOREIGN.		
Rio Tinto	334	£16,433 14 6
Italian	855	6,825 14 0
Algerian	1121	5,817 10 6
New Quebrada	650	5,506 16 0
Carrachelo	342	2,855 4 0
Portuguese	139	2,315 15 6
Cuba	64	2,049 5 0
Adjustrel	265	1,383 4 0
Santander	70	988 15 0
Laque lo Abarca	60	624 0 0
Negrillo	96	513 12 0
Telhadella	16	116 8 0
Cacirinha	10	88 5 0
Total	4122	£45,093 0 6
RECAPITULATION.		
British	2858	£12,381 17 6
Colonial	3499	62,486 18 0
Foreign	4122	45,093 0 6
Sundries, ore, regulus, &c.	537	4,123 17 6
Total	11,016	£124,088 13 6

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Purchasers.	Tons.	Amount.
Grenfell and Sons	1470	£16,269 6 2
Nevill, Druce, and Co.	1482	15,101 5 8
Vivian and Sons	2308	24,577 0 0
Williams, Foster, and Co.	2950	30,397 8 5
Mason and Elkington	960	8,802 13 0
Charles Lambert and Co.	847	15,281 0 3
Landore Copper Company	679	9,763 14 6
Sweetland and Co.	489	3,596 5 6
Total	11,016	£124,088 13 6

DIRECT-ACTING STEAM-PUMPS.—The pumping-engine invented by Messrs. THORPE and PRINCE, of Manchester, may be either horizontal or vertical; the steam cylinder, the pump, and bed-plate are all cast in one solid casting, or they may be cast separately and bolted together, but they prefer the horizontal type with steam cylinder pumps and bed-plate cast in one solid casting. The steam cylinder is fitted with two slide-valves and one piston-valve, one of the slide-valves (which is a large one) is for the purpose of admitting steam to the steam-cylinder through a series of three port ways; the piston-valve is mounted on the top of the large slide-valve, and is connected to it by means of a projection which is cast on the top of the said large slide valve; the second slide-valve (which is a small one) is placed on its side working in the same valve-box, and is mounted on one side of the large slide-valve. The valve-box is provided with a loose cover on its side with a projecting facing which passes through into the inside of the valve-box; the said projecting facing is provided with three port holes for the purpose of admitting steam to each end of the piston-valve. The small slide valve slides backwards and forwards on this projecting face, and is worked backwards and forwards by means of a tappit, which is secured to the valve spindle inside the valve-box by a screw or cotter, or other similar means. This tappet works in a recess which is cast in the top of a large valve, the said recess being cast equal in length to the width of the tappit-box and the traverse of the small slide valve; this arrangement allows the small valve to traverse and open the port or passage admitting steam to the piston-valve before the boss of the tappit comes in contact with the end of the recess in the top of the large valve, this allowing the small valve to open before the large valve. These valves are worked by means of a lever motion connected to a cross head which is fixed on the main piston-rod of the engine, the same as used in the steam pump known as the Lancashire pump. The valve-box may also be cast in one solid casting, and without a loose cover on the side, the projecting face for the small valve being cast solid on the side of the valve-box with the port ways passing through it to the piston-valve.

Messrs. FRY, JAMES, and Co.—COPPER has held a steady course, without any particular life. Some considerable sales of Chilian—upwards of 1500 tons altogether—gave a temporary improvement to quotations, which, however, was not maintained. On Tuesday next, the 24th inst., 600 tons of Wallaroo and 200 tons of Burra Burra will be offered for sale by public auction.—IRON continues quiet in all branches.—TIN has been heavy, and prices have become weaker by about 20s. per ton since our last.—SPELTER is again a shade cheaper, and sells very slowly.—LEAD has recovered slightly from the worst, but is still quiet.—TIN-PLATES without change.

HARRINGTON, HORAN, AND CO. (Liverpool)—Arrivals here during the fortnight of West Coast, S.A., produce:—Iquiria, from Valparaiso, 885 tons bars, 120 tons ingots; Llama, from Pisco, 100 tons ore. At Swansea, Florence Danvers, from Carrizal, 745 tons regulus.

According to the Board of Trade Returns, the total imports and exports into and from this country for the first six months of the following years were:—

IMPORTS.	1875.	1876.	1877.
Copper in ores ..... Tons	3,331	4,335	5,779
Ditto, regulus	8,097	7,098	5,043
Ditto, bars, cakes, and ingots	23,444	19,736	20,964
In pyrites (estimated)	6,814	7,450	9,159
Total imports	42,286	38,589	40,946
EXPORTS.			
English copper, wrought & unwrought	10,650	11,480	10,824
Foreign copper, unwrought	6,931	7,647	7,449
Yellow metal	6,998	6,225	8,478
Total exports	24,579	25,355	26,751

Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	720	2 30	9,941	—	—
Swansea	2643	4064	2,329	—	10
Total	3363	6094	12,270	—	10

Representing about 15,692 tons fine copper, against 15,910 tons June 30; 13,067 tons July 14, 1876; 14,523 tons July 14, 1875; 16,200 tons July 14, 1874.

Stock of Chili copper in Havre, 8420 tons fine, against 5960 tons July 14, 1876; stock of Chili copper afloat and chartered for to date, 10,600 tons fine, against 9980 tons July 14, 1876; stock of foreign copper in London, chiefly Australian, 4300 tons fine, against 5652 tons July 14, 1876.

CHEMICALS, MINERALS, AND METALS.—Messrs. J. Berger Spence and Co. (July 18).—Acetate of Lime, 9*l.* 10s. per ton.—Alumina: Alum, 7*l.* 15s. for loose lump; ground, 7*l.* 15s.—Aluminous cake, 4*l.* 10s.—Ammonia: Sulphate, grey, 19*l.* 10s.; best London white, 19*l.* 10s.; muriate—white, 27*l.*; sal ammoniac, firsts, 45s.; seconds, 44s.—Acid: Tartaric, English, ground or crystal, 1s. 6*d.*; foreign, 1s. 5½*d.*, crystals; oxalic, 5*d.*; sulphuric, 3*l.* 10s. to 3*l.* 15s.; picric acid, 1s. 6½*d.* per lb.—Arsenic: New Consols make 8*l.* 15s.—Bleaching Powder: At 5*l.*; for the whole of the year 1877, 5*l.* 15s.—Litharge: Best flake, 24*l.*—Metallic Salts: Iron salts, green and rusty copperas, 55s.; in casks or barrels, 60s.—Copper Salts: Sulphate of copper, 22*l.* 15s.—Magnesia: Epsom salts, 3*l.* 5s.—Nitrate of Soda: 14s. 3*d.* to 14s. 6*d.*—Potash: Muriates, 80 per cent., at 6*l.* 8s. 6*d.* f.o.b.; Prussiate, yellow, 10¾*d.*; chlorate, 9*d.*; bichrome, 4½*d.*—Soda: Cream caustic, 60 per cent., 12*l.*; white, 60 per cent., 12*l.* 7s. 6*d.*; soda ash, 1¾*d.* to 1⅞*d.*; soda crystals, 4*l.* 7s. 6*d.*; bi-carbonate, 11*l.*; salt cake, 2*l.* 10s.; Glauber salts, 2*l.* 15s.—Sugar of Lead: Brown, 26*l.*; grey, 30*l.* 10s.; white, 37*l.*—Brimstone: Best thirds, 5*l.* 7s. 6*d.* to 5*l.* 10s.—China-clay: 15s. f.o.b. Cornwall; "Rosemellyn," 24s.; "BM," 34s.—Iron Ore: Hematite, 15s. to 22s. 6*d.*; Algerian, 53 per cent., 14s. f.o.b.—Manganese: Ores, 90s. for 70 per cent.—Pyrites: Spanish cupreous, 5½*d.*; non-cupreous, 6¾*d.*—Phosphate of Alumina, 3*l.* to 3*l.* 10s. per ton.—Phosphates: High strength, 80 to 85 per cent., 1s. 4*d.* to 1s. 5*d.* per unit; Estramadura, 1s. 3*d.*; ordinary, 60 per cent., 1s.; precipitated phosphate of lime, 70 per cent., 5*l.* 15s.—Iron: Middleborough Pig iron, No. 1, 45s.; No. 3, 39s. 6*d.*; No. 4 (foundry), 40s.; No. 4 (forge), 39s. net.—Hematite, No. 1, 67s. 6*d.*; No. 2, 67s. 6*d.*; No. 3, 64s.; No. 4, 61s.; No. 5 (mottled and white), 64s.—Bessemer, No. 1, 67s. 6*d.*; No. 2, 67s. 6*d.*; No. 3, 64s., less 2½ p. c.—Scotch warrants, 54s. 3*d.*; Scotch, g.m.b., No. 1, 52s.; No. 3, 50s. net.—Copper: Chili bars, 68*l.*; B.S. ingot, 77*l.* 10s.; tough cake, 75*l.* 10s.—Lead: Best English soft pig, 20*l.* 5s.; German soft pig, 20*l.* c.i.f., Liverpool or London—Spelter: Silesian, 20*l.*; English, 19*l.* 15s. on rails, makers' works.—Tin: Straits, 85*l.*; Australian, 68*l.*; British, 72*l.*—Tin-Plates: Best charcoal, 28s.; charcoal, 25s.; best coke, 23s.; coke, 22s.—Tubes and Fittings: Dis. on application.

NOTWITHSTANDING the DULNESS of BUSINESS, the undersigned is able to DEAL at CLOSE PRICES in the following MINING SHARES:—Van, Eberhardt, Flagstaff, Richmond, Exchequer, Yorke Peninsula (preference and ordinary), and Don Pedro.
T. G. TAYLOR, Sworn Broker, 3, Pinner's Court, Old Broad street, London, E.C.

TO BE SOLD (nearly new), a 12-in. SURVEYOR'S DUMPY LEVEL, in case; also, an excellent CASE of German silver DRAWING INSTRUMENTS.
Apply to G. SLANEY, 9, Brockley Buildings, Liverpool.

TO MINING AGENTS, AND OTHERS.—An Independent Gentleman is in possession of FOURTEEN OFFICIAL PRINTED RAILWAY SHAREHOLDERS' LISTS, comprising the principal Companies in "U. K." (all dated December, 1876). Any of the above can be HIRED, specially adapted for Distributing Circulars, Reports, &c.
Address, "Shareholder," at C. H. May and Co.'s General Advertising Offices, No. 78, Gracechurch-street, E.C.

GOLD IN PERSIA.—Gold is reported to have been discovered in Persia. We learn from a Teheran telegram that the Persian Government has received reports from a geological explorer announcing the existence of rich auriferous quarries in the Zengan district.

PETROLEUM.—In the last six months the value of petroleum imported was 792,904*l.*; in the same period of 1876, 436,607*l.*

TRANSPARENT GOLD.—In the course of a lecture on Gold, delivered before the Franklin Institute, as reported by the secretary, Mr. A. E. Outerbridge, jun., of the Assay Department of the Mint, in Philadelphia, gave an account of some experiments he had made, with a view of ascertaining how thin a film of gold was necessary to produce a fine gold colour. The plan adopted was as follows:—From a sheet of copper rolled down to a thickness 5-1000ths of an inch he cut a strip 2½ by 4 in. This strip containing 20 square inches of surface, after being carefully cleaned and burnished, was weighed on a delicate assay balance. Sufficient gold to produce a fine gold colour was then deposited on it by means of the battery; the strip was then dried without rubbing and re-weighed, and found to have gained 1-10th of a grain, thus showing that 1 grain of gold can, by this method, be made to cover 200 square inches, as compared to 75 square inches by beating. By calculation, based on the weight of a cubic inch of pure gold, the thickness of the deposited film was ascertained to be 1-980,400th of an inch, as against 1-367 650th for the beaten film. An examination under the microscope showed the film to be continuous and not deposited in spots, the whole surface presenting the appearance of pure gold. Not being satisfied, however, with this proof, and desiring to examine the film by transmitted light, Mr. Outerbridge has since tried several methods for separating the film from the copper, and the following one has proved entirely successful. The gold plating was removed from one side of the copper strip, and by immersing small pieces in weak nitric acid for several days the copper was entirely dissolved, leaving the films of gold intact, floating on the surface of the liquid. These were collected on strips of glass, to which they adhered on drying. When viewed with transmitted light with the microscope, it was seen to be of the characteristic bright green colour, and very transparent. Viewing it by means of reflected light its true gold colour is seen. Mr. Outerbridge has continued his experiments, and by the same processes has succeeded in producing continuous films, which he determined to be only the 1-2,798,000th of an inch in thickness, or 10-784 times thinner than an ordinary sheet of printing paper, or 60 times less than a single undulation of green light. The weight of gold covering 20 square inches is in this case 35 100ths of a grain; 1 grain being sufficient to cover nearly 4 square feet of copper.—*Mining and Scientific Press* (San Francisco).

IMPROVED VALVE MOTION FOR STEAM-ENGINES.—Mr. HENRY HAERING, New York, has patented an improved device for operating the slide valve of a steam-engine from the piston-rod, in such a way that the valve will be moved slightly to partially uncover the inlet and exhaust ports as the piston completes its stroke, and its motion will be continued in the same direction as the piston begins to move upon the return stroke, until the ports are fully opened, and will then stand still, with the ports fully open, until the piston has nearly completed its return stroke. It consists in the combination of a three-armed bar, two levers, connecting bar, and connecting lever, with the piston-rod and the valve stem of a steam-engine; and in the combination of a lockbar, spring, two cylinders, and pin, with the two levers and the three-armed bar. As the piston approaches the end of its stroke the upper end of an upright arm of a bar strikes the concaved side of the upper part of one of the levers operating it, and moving the slide valve to close the ports and admits steam in front of the piston. As the piston begins its return stroke the inclined upper surface of one of the side arms of the three-armed bar comes in contact with the lower end of the said lever, and continues its motion in the same direction, fully opening the said inlet port, which remains fully open until the piston has again nearly nearly completed its stroke.

LLANELLY LOCAL BOARD OF HEALTH.

EXTENSION OF WATER-WORKS.

CONTRACT No. 3.

CAST-IRON PIPES.

THE LLANELLY LOCAL BOARD OF HEALTH are prepared to RECEIVE TENDERS for the SUPPLY and DELIVERY of about ONE HUNDRED 24 in. CAST IRON PIPES.

Specification and Form of Tender may be obtained at the office of the said Board at the Town Hall, Llanelly, from Messrs. BEARDMORE and BARNES, Civil Engineers, 39, Great George street, Westminster; or from Mr. E. H. DOUGLAS, Resident Engineer, Town Hall, Llanelly.

Sealed Tenders, marked "Tenders for Cast Iron Pipes," are to be sent to the Clerk of the said Board, at the Town Hall, Llanelly, on or before Nine o'clock in the morning of Saturday, the 4th day of August, 1877.

The Local Board do not pledge themselves to accept the lowest or any Tender.

By order, JOHN JENNINGS, Clerk.

Town Hall, Llanelly, July 18, 1877.

THE AUSTRALIAN MINING COMPANY
(Incorporated by Royal Charter).

Notice is hereby given, that the THIRTY-SECOND ANNUAL GENERAL MEETING of the shareholders of this company will be HELD at the Guildhall Tavern, No. 32, Gresham-street, E.C., on MONDAY, the 30th inst., at One o'clock P.M. precisely, to receive the report, accounts, and balance-sheet for the past year; to elect directors in lieu of Frederick Collier, Esq., and Alderman Sir Charles Wentham, who retire by rotation, and offer themselves for re-election; to fix the remuneration of the auditors for the past year; to elect auditors for the present year.

By order,
GEORGE PALMER, Chairman.

No. 1, Coleman-street Buildings, Moorgate street, E.C., July 9, 1877.

The Transfer-books will be closed from the 16th to the 31st inst., both days inclusive.

THE RAILWAY LOCOMOTIVE—as now constructed—WASTES ONE HALF of the POWER of the ENGINES, in CREATING RESISTANCE TO ITS OWN PROGRESS.

See BEESLEY'S PATENT SPECIFICATION, No. 5011, 1876, where the REMEDY for this and other DEFECTS are pointed out. Copies, 6d. each, post free.

G. BEESLEY, C.E.

9 St. Paul's-road, Kennington, London, S.E., July 20, 1877.

GLASGOW AND THE HIGHLANDS.

ROYAL ROUTE VIA CRINAN AND CALEDONIAN CANALS, by ROYAL MAIL STEAMER, "IONA," DAILY, at Seven A.M., and from GREENOCK, at Nine A.M.

See bill, with map and tourist fares, free, at Messrs. CHATTO and WINDUS, Publishers, 74, Piccadilly, London; or by post from DAVID HUTCHESON and Co., 119, Hope street, Glasgow.

T. R. GLOVER,

MINERAL DEALER AND BROKER AND GENERAL FINANCIAL AGENT

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Mr. E. JACKSON,

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Assays or Complete Analyses made of Copper, Silver, Lead, Zinc, Tin, and other Ores. ASSAYING TAUGHT.

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MESSRS. ENDEAN, FISHER, AND CO.,
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From a thorough knowledge of their business, based upon many years' experience, are PREPARED to ADVISE on every description of SECURITY for INVESTMENT or SPECULATION.

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Orders or Telegrams for the Sale or Purchase, for cash or account, promptly executed on receipt.

MESSRS. J. TAYLOR AND CO.,
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Have Agents in England, Scotland, Wales, and on the Continent.

MR. W. TREGELLAS, 122, BISHOPSGATE STREET WITHIN, E.C.,
Deals in all descriptions of Stocks and Shares at close market prices.

WILLIAM FRANCIS, M. and C.E., 2, DERWEN VILLAS, MOLD. Over Twenty-five years' experience. Pupils received for a Course of Instruction in Surveying, Dialling, Levelling, Geology and Mineralogy —their practical application to the various branches of Metalliferous Mining, Quarrying, &c. Terms on application.

CAPTAIN ABSALOM FRANCIS
MINING AGENT, ENGINEER, AND SURVEYOR
GOGINAN, ABERYSTWITH.

TO AGENTS OF MINES, AND OTHERS.

MR. R. PASCOE, MINING ENGINEER, LAND SURVEYOR, AND GENERAL DRAUGHTSMAN (Fourteen years with JAMES HENDERSON, Esq., C.E.) Mines surveyed or inspected, and faithfully reported on. Terms moderate.

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A vacancy for a Pupil.

CARN MARTH COPPER MINE
(LIMITED).

IN THE PARISH OF GWENNAP, CORNWALL.

Capital £10,000, in 5000 Shares of £2 each.

10s. per share on application, and 10s. per share on allotment.

Where no allotment can be made, the deposit will be returned in full.

No call for six months: probably none further will be required.

Directors to be chosen by the Shareholders at first meeting.

BANKERS.
Messrs. GLYN, MILLS, and CO., London.
Messrs. TWEEDY, WILLIAMS, and CO., Redruth, Cornwall.

MANAGER.
MR. CHAS. BAWDEN, Poldice House, St. Day, Scorrier, Cornwall.

This company is formed for the purpose of working a piece of mining ground in the parish of Gwennap, the property of His Grace the Duke of Buckingham and Chas. Trelawney, Esq., granted for a term of 21 years, at a royalty of 1-18th dues. It is situated in the immediate proximity of mines of established value for copper at the north foot of the well known granite range of Carn Marth, surrounded by mines that have been immensely productive and profitable. It is virgin or unexplored ground, in a line of the lodes of the Carn Brea district from the west, and the lodes of Gwennap from the east, of which well-known district this ground forms a part.

The Carn Marth grant is about 500 fathoms from east to west on the course of the lodes, and 300 fathoms in width, affording scope for opening out a deep and extensive mine. The lodes of Great Consols, Wheal Jewell, and Wheal Damsel are within its limits. The profits from those mines alone exceeded over £800,000 sterling; the back (surface outcrop) of one has been opened about the centre of the grant, and a shaft sunk on it 15 fathoms, which proves to be 6 feet wide, composed of a true copper go-san, in character the same as found on the top of all the great copper deposits of the county; it is also intersected by cross courses, to which is not a little to be attributed the immense accumulations of copper ore met with in the surrounding mines, and which continued for 40 years to pay very large dividends. Moreover, an elvan course of corresponding crystaline character to those in connection with the great body of ore found in the Great Consols, Wheal Jewell, and Wheal Damsel accompanies the Carn Marth lodes; it is, therefore, to be confidently relied on that comparatively little depth of development is required to ensure the realisation of a copper mine of very great value in Carn Marth.

It is intended to have a 40 in. diameter cylinder steam-engine for this mine, to ensure its fully effectual development—say, in the first place to a depth of 50 fms., at which several of the greatest mines of Gwennap commenced being ore-producing, proving more and more productive in depth, and paying larger profits than any mines in the other districts of Cornwall. The copper mines of this district have realised altogether such astounding profits as have gained for them a wide world celebrity, many of the leading Cornish families being indebted to them for their influential position and wealth. It is only intended by the amount of capital nominated to fix the maximum liability of shareholders, not meaning it to be understood that anything like so much will be required to open out and establish Carn Marth as a permanently good dividend-paying mine, which is confidently to be relied on, will not necessitate a larger expenditure than £5000, paying for all engine power, mechanical means and appliances, and, indeed, everything required, thus giving a rich prize for comparatively little money.

The shareholders will have the full benefit of the capital subscribed, there being no claim for promotion money or free shares, the object is to offer and open out a good mine on the principle of equitably advantageous co operation, the cost of leases and out-of pocket expenses consequent on its acquirement being, of course, charged to the company. One moiety of the capital will be privately subscribed, leaving 2500 shares to be issued, which will be allotted according to priority of application.

Shares to be applied for by letter, remitting the first payment of 10s. per share, either to the manager or bankers of the company.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and in the MATTER of the WEST JEWELL TIN MINING COMPANY (LIMITED).—Notice is hereby given, that a PETITION for the WINDING-UP of the above named company by the Court was, on the 14th day of July, 1877, presented to the Vice-Warden of the Stannaries, by William Thomas Allen, of 67, Upper Thames street, in the City of London, printer and stationer, claiming to be a creditor of the said company, and that the said petition is directed to be heard before the Vice-Warden at the Law Institution, in Chancery Lane, London, on Monday, the 30th day of July instant, at half-past Two o'clock in the afternoon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, his solicitor, or his agent, of his intention to do so, such notice to be forthwith forwarded to the Secretary of the Vice-Warden, P. P. Smith, Esq., Truro, Cornwall.

Every such contributory or creditor is entitled to a copy of the petition and affidavit verifying the same from the petitioner or his solicitor within 24 hours after requiring the same, on payment of the regulated charge per folio..

Affidavits intended to be read at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 26th day of July instant, and notice thereof must at the same time be given to the petitioner or his solicitor.

ROBERT DOBELL, Solicitor, Truro, Cornwall.
(Agent for Edward Beall, 2, Queen's Buildings, Queen Victoria-street, London, Solicitor for the Petititioner.)

Dated this 18th day of July, 1877.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the NEW CHIVERTON MINING COMPANY (LIMITED).—TO BE SOLD, under the direction of the Registrar of the said Court, on Thursday, the 26th day of July instant, at Eleven o'clock in the forenoon, at the NEW CHIVERTON MINE, in the parish of Perranzabuloe, within the said Stannaries, in One or more Lots (subject to such conditions as shall be then and there stated and produced), all that the INTEREST of the said company of and in the SETTS under which its mining operations have been carried on, together with the WHOLE of the

MINING PLANT, MACHINERY, MATERIALS, AND EFFECTS,

Belonging to the said company, and being within and upon the said Mine, and comprising:—

ONE 40 in. cylinder PUMPING ENGINE, with ONE BOILER, 10 tons.

ONE 4 horse power ENGINE and BOILER, with crusher attached.

Large shears and two shieves; 8 arm capstan; capstan rope; a quantity of 9, 11, 12, and 15 in. pumps; 11 in. main rods; rod plates and bolts; 2½ in. and 1½ in. iron rods; 120 fms. iron stave ladders; 5 in. pole and lift for condensing water; two horse whims; shaft tackle and shieves; several whim and other kibbles; winch, large quantity of launders; railroad and stands; dressing floors; two jigging machines and hutches; frames and kieves; several wood houses; quantity of chains; wire and hemp ropes; smiths' bellows; vices, anvils, jacks, and tools; smith and miners' tools; grindstone; screw stock; taps and plates; beams, scales, and weights; a quantity of new and old iron; powder; candles; brass; new and old timber; miners' dial; account house furniture; and a quantity of other materials and effects in general use in mines.

To inspect the above, apply to the Bailiff in charge at the mine; and for further particulars to Mr. CHARLES WILLIAM CLINTON, the Official Liquidator of the said company, at the Stannaries Court Office, Truro.

HODGE, HOCKIN, AND MARRACK, Truro.
(Solicitors for the said Official Liquidator.)

Dated Stannaries Court Office, Truro, July 11th, 1877.

DUCHY GREAT CONSOLS, LATCHLEY, EAST CORNWALL.
IMPORTANT SALE OF ENGINES, MACHINERY, AND WORKING PLANT, ON THE ABOVE MINE.

MESSRS. SKEWIS AND SON are instructed to SELL, BY AUCTION, at the above Mine, situated about six miles from Tavistock, twelve miles from Liskeard, and three miles from the Calstock Quay, on the banks of the River Tamar, on Tuesday, the 31st day of July, 1877, and following day, commencing at One o'clock precisely, the VALUABLE

ENGINES, MACHINERY, AND WORKING PLANT,

Consisting of—A superior 50 in. PUMPING ENGINE, 9 ft. stroke, with an 11 ton BOILER attached; a 22 in. WHIM ENGINE, with a 9 ton BOILER (complete), and in good condition, also capstan attached; Cornish CRUSHER; 90 fms. 2½ in. flat rods; 120 fms. 2¼ in. ditto; shears; large quantity of pumps, varying in size from 6 in. to 13 in.; several pitch pine rods; strapping plates; sheaves of various sizes; 2 balance bobs; 2 angle ditto; large quantity of new and useful iron; smiths' bellows; anvils; screwing tackle; large wood sheds; 240 fms. ¾ in. steel wire capstan rope, nearly new; 220 fms. 2 in. steel wire rope; several cwts. of borer and other steel, &c.

Catalogues, with full particulars, may be obtained from Mr. W. MATHEWS, Engineers, Tavistock; or of the Auctioneers, at their offices.

Refreshments at Twelve o'clock. Sale at One precisely.

Dated Tavistock and Gunnislake, 12th July, 1877.

FOREST OF DEAN, GLOUCESTERSHIRE.

FOR SALE, and IMMEDIATE DELIVERY, in One Lot, or separately, all that

VALUABLE AND EXTENSIVE COLLIERY PLANT
At the NEW BOWSON COLLIERY:—

1.—Consisting of ONE doubled powered PUMPING ENGINE, with 85 inch cylinder and 10 ft. stroke; two lifts of pumps, 18 in. diameter, and one lift 20 in. diameter; pump rods, rod plates, plungers, buckets, clacks, and all complete.

2.—ONE powerful CRAB ENGINE, with a pair of 12 in. cylinders and 2 ft. stroke. Also, a JACK ENGINE, with 12 in. cylinder and 2 ft. stroke.

3.—ONE WINDING ENGINE, with a pair of 26 in. cylinders and 4 ft. stroke.

4.—FOUR BOILERS, 50 ft. long, 5 ft. diameter, with fittings, &c., complete, in working order.

5.—TWO BOILERS, 30 ft. long, 6 ft. 6 in. diameter, complete.

6.—SAW MILL ENGINE, with cylinder 12 in. diameter, 2 ft. stroke, and cast-iron circular saw frame, complete; four horse crabs, three sets of head gear, &c.

For further particulars and leave to view, apply to—

MR. BURDESS, CINDERFORD, GLOUCESTERSHIRE.

SLATE QUARRY.

FOR SALE, a SLATE QUARRY in NORTH WALES, in full WORKING ORDER. The quality of the Slate is very good, and terms favourable. Suitable either for a company or for private investment. Capital required, £3000. Satisfactory reasons given why it is being sold.

For full particulars address, "Delta," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

SLATE QUARRY IN FULL WORK.

TO BE LET, OR SOLD.—Four hundred tons of Slate made monthly, and delivered in Great Western Railway trucks from quarry at 6d. per ton.

Books may be inspected, and all information given, on application to "P. C.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

HEMATITE IRON ORE ROYALTY,
AT MOOR ROW, BIGRIGG MOOR, NEAR WHITEHAVEN.

TO BE LET, BY TENDER, for a term of years, to commence from the 1st September, 1877,—

The IRON ORE under SEVENTY-FIVE ACRES of LAND at MOOR ROW, in the parishes of Cleator and Egremont, in the county of Cumberland, in the occupation of Mr. John Postlethwaite, of the Hollins, Whitehaven.

This Royalty is situate in the centre of the Bigrigg District, is bounded on the north-west and south by mines of Messrs. Lindow, and on or towards the east by mines of Messrs. Ainsworth and Co. and Messrs. Burnyeat, Brown, and others, and in its immediate neighbourhood are other well-known mines worked by Lord Leconfield, Messrs. Lindow, John Stirling, Esq., and the Cleator Iron Ore Company, which latter company are sinking a pit adjoining a portion of the eastern boundary of the estate.

The royalty has been actively worked during the last twenty years, and large quantities of ore have been raised from shallow workings, extending over an area of about twenty acres. The present working shaft is in good condition, and is supplied with adequate engine power, and all necessary machinery and plant. It is connected with the Cleator and Egremant Railway by a branch line, and the metal can be tipped into wagons direct from the shaft.

The ore of the Bigrigg District is remarkable for its purity and high metallic yield, and commands the highest price.

Tenders must be endorsed "Tender for Moor Row Royalty," and will be received by Mr. BROWN, Solicitor, 12, Scotch street, Whitehaven, up to the 20th August, immediately after which date the taker will be declared. The lessors do not, however, bind themselves to accept the highest or any tender.

After the 15th June, conditions of letting may be had, and plans showing the royalty, underground workings, and adjoining mines, may be seen on application to Mr. GEORGE GREY, M.E., New Lowther-street, Whitehaven; or to Mr. BROWN, 12, Scotch-street, Whitehaven.—7th June, 1877.

BEAULIEU WHITE BRICK AND TILE WORKS.

TO BE LET, the above LONG-ESTABLISHED WORKS, with an INEXHAUSTIBLE SUPPLY of the FINEST CLAY for the manufacture of WHITE FACING BRICKS, TILES, and ORNAMENTAL GOODS, together with all necessary kilns, drying sheds, and with or without steam power. The works adjoin the Beaulieu River, which is navigable for ships of considerable tonnage.

For particulars, apply to Mr. GEORGE RICHARDSON, Manor Office, Beaulieu, Southampton.

VERY VALUABLE MINES—SOUTH-WEST OF IRELAND.

EXTENSIVE AND RICH MINES OF SILVER-LEAD, BLENDE, COPPER, &c., which require only to be drained of water in order to make immediate returns of ore. Any amount of machinery may be driven by water-power.

Capitalists will find this a safe and profitable investment; and reliable information may be obtained on application to Capt. W. THOMAS, who has had nearly 40 years' experience in the management of Mines in Ireland.

Cappagh Mine, Ballydehob, Co. Cork, May 28th, 1877.

IN VOLUNTARY LIQUIDATION UNDER THE COMPANIES ACT, 1862.
OLD TREBURGETT SILVER AND LEAD MINING COMPANY (LIMITED).

TO BE SOLD, BY TENDER, as a going concern all the BENEFICIAL INTEREST of the above Company, in the extensive property known as the

OLD TREBURGETT MINE,

In the parish of St. TEATH, in county of CORNWALL, and also the WHOLE of the movable PLANT and MACHINERY.

The Old Treburgett Mines have been highly productive, and are now selling ore monthly nearly sufficient to pay costs, while the prospects for immediate improvement are highly encouraging.

The mines, machinery, and plant are in full working order.

The works may be inspected at any time upon application to the Liquidator, who will give an order to the manager at the mines.

The leases are for long unexpired terms, and there are covenants to renew.

The Liquidator will receive tenders until Thursday, the 2nd day of August, but he does not bind himself to accept the highest or any tender.

Full particulars as to terms of payment, &c., may be had of—

FELIX FRANCIS WILSON, Liquidator.

20, St. Helen's-place, London, E.C., 19th July, 1877.

IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867,
AND IN THE MATTER OF THE
OLD TREBURGETT SILVER AND LEAD MINING COMPANY (LIMITED).

THE CREDITORS of the ABOVE NAMED COMPANY are required, on or before the 2nd day of August, 1877, to SEND THEIR NAMES and ADDRESSES, and the particulars of their DEBTS or CLAIMS to me, the Liquidator of the said company, at the offices of the company, 20, St. Helen's place, in the City of London; and, if so required by notice in writing from me, are to come in and prove their said debts or claims at my offices, as above mentioned, at such time as shall be specified in such notice, or in default thereof they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such debts are proved.

FELIX FRANCIS WILSON, Liquidator.

Dated this 16th day of July, 1877.

FOR SALE, a 14-horse power PORTABLE STEAM ENGINE, with link motion reversing gear, also gear to wind and pump.

A 25-horse power PORTABLE.

An 18-horse power VERTICAL STEAM ENGINE, and a 9½ in. cylinder VERTICAL ENGINE, and combined winding drum.

A 6-ft. PAN MORTAR MILL, VERTICAL ENGINE, and BOILER.

Apply to—

BARROWS AND STEWART, ENGINEERS, BANBURY.

FOR SALE, at NEW PEMBROKE MINE, CORNWALL.—An excellent 80 in. cylinder PUMPING ENGINE, with FOUR good 12 ton BOILERS.

25 in. DRAWING ENGINE, and TWO BOILERS.

TWO SPARE BOILERS.

THREE IRON STAMPS AXLES.

100 fathoms FLAT RODS, 3⅛ inch.

A quantity of ROD PLATES and other MATERIALS.

Apply to Mr. JOHN POLKINGHORNE, PAR OFFICE, PAR STATION.

DISCOVERY OF SILVER AT WHEAL NEWTON.—This mine is now the RICHEST SILVER MINE in the United Kingdom. The next DIVIDEND will be DECLARED in July. Full information may be obtained, and shares may be purchased or sold through any respectable sharedealer, or on application to our principal offices, 134, Palmerston Buildings, Bishopsgate-street, London, E.C.

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MALLEABLE IRON CASTINGS, Every Description.

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THE BIRMINGHAM WAGON COMPANY
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MANUFACTURE RAILWAY CARRIAGES and WAGONS of EVERY DESCRIPTION, for HIRE and SALE, by immediate or deferred payments. They have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract. MANUFACTURERS also of IRONWORK, WHEELS, and AXLES.

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Has 24 years' experience in Mining and Smelting, and 10 years' experience in American Business and Law, offers his services at moderate charges for Reporting on Mining and other Property in any of the above-named States or Territories; gives correct, safe, and responsible advice as to securing full titles and possession; and, as to best mode of utilising the property, will assist in settling existing difficulties by compromise, and in disposing of developed mining property when held at real value; offers his assistance for securing undeveloped mining properties at home prices. As to care taken in reporting, reference is made to the *Mining Journal* Supplement, April 1, 1876, containing report on property of the Maxwell Land Grant and Railway Company; as to technical standing, to the prominent men of the trade—compare *Mining Journal* of Aug. 30 and Nov. 31, 1872, and *New York Engineer and Mining Journal*, Feb. 28, 1874.

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"This is the most important work written for mechanical engineers that has been published for many years. We have risen from a very lengthened examination of it, with the conviction that it is the most complete, and, taken for all in all, the best book of its kind yet published."—*Engineer*.

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London: BLACKIE and SON, Paternoster Buildings, and sold by all Book-sellers.

GEOLOGY AND PALÆONTOLOGY.—SIX ELEMENTARY LECTURES, adapted to a Juvenile Audience, will be given by Professor TENNANT, at his residence, 149, STRAND, W.C., in the Midsummer Holidays, July 30, 31, August 1, 2, 3, and 4, at Ten A.M. and Three P.M. Terms, Half-a-Guinea for the Course.

PROFESSOR TENNANT will probably afterwards repeat the Elementary Lectures on Mineralogy given during the last Christmas Holidays, and those on Geology given at Easter.

GEOLOGY.—In the Preface to the Student's ELEMENTS OF GEOLOGY, by Sir CHARLES LYELL, price 9s., he says:—"As it is impossible to enable the reader to recognise rocks and minerals at sight by aid of verbal descriptions or figures, he will do well to obtain a well-arranged collection of specimens, such as may be procured from Mr. TENNANT (149, STRAND), Teacher of Mineralogy at King's College, London." These Collections are supplied on the following terms, in plain mahogany cabinets:—

100 Specimens, in Cabinet, with three trays	£ 2 2 0
200 Specimens, in Cabinet, with five trays	5 5 0
300 Specimens, in Cabinet, with nine drawers	10 10 0
400 Specimens, in Cabinet, with thirteen drawers	21 0 0

More extensive Collections at 50 to 5000 Guineas each.

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Lead Hills.	Tankerville.	Great Laxey.
Roman Gravels.	Penstruthal.	Dyliffe.
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Investors confidentially advised by special appointment or letter

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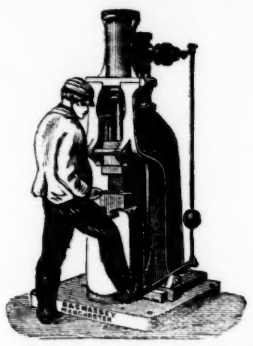
STEAM HAMMERS

Of all sizes, from ½ cwt. to 20 tons, with self-acting or hand motion, in either case giving a perfectly **DEAD BLOW**, while the former may be worked by hand when desired. **Large Hammers**, with Improved Framing, in Cast or Wrought Iron. **Small Hammers**, working up to 500 blows per minute, in some cases being worked by the Foot of the Smith and not requiring any separate Driver.

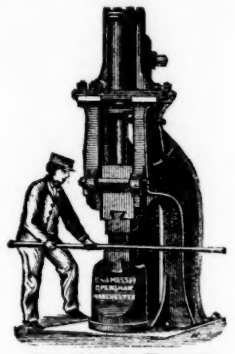
SPECIAL STEAM STAMPS, for Forging, Stamping, Punching, Bolt-making, &c.

CIRCULAR SAWS for Hot Iron.

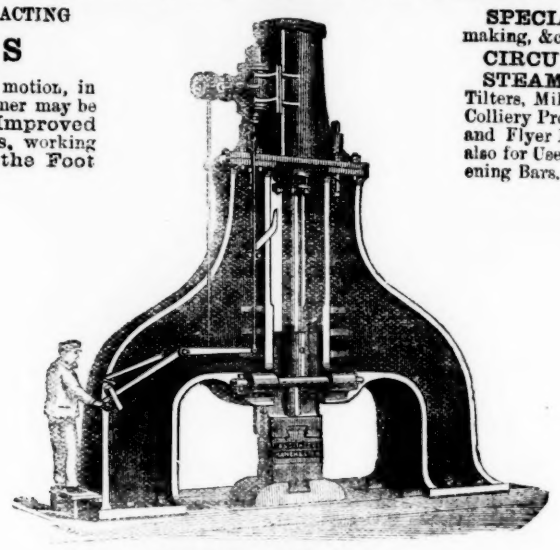
STEAM HAMMERS for Engineers, Machinists, Shipbuilders, Steel Tilters, Millwrights, Coppersmiths, Railway Carriage and Wagon Builders, Colliery Proprietors, Ship Smiths, Bolt Makers, Cutlers, File Makers, Spindle and Flyer Makers, Spade Makers, Locomotive and other Wheel Makers, &c., also for Use in Repairing Smithies of Mills and Works of all kinds; for straightening Bars, bending Cranks breaking Pig-iron, &c.



Small Hammer with Foot Motion.



General Smithy Hammer.



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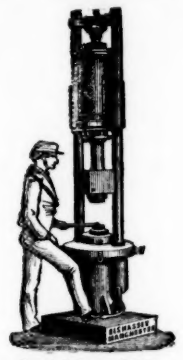
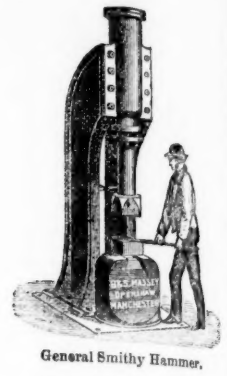


Special Steam Stamp.



General Smithy Hammer.

From 60 to 100 Steam Hammers and Steam Stamps may usually be seen in construction at the Works.

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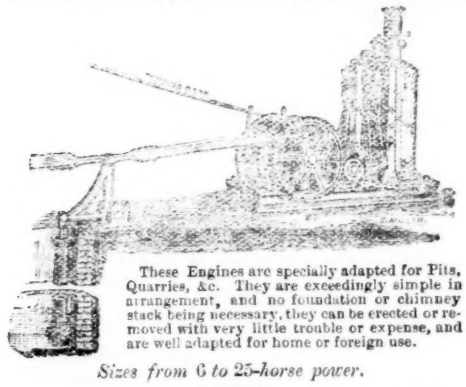
CHAPLINS' PATENT PUMPING AND WINDING ENGINES,

For Winding or Pumping, either separately or combined.



These Engines are specially adapted for Pits, Quarries, &c. They are exceedingly simple in arrangement, and no foundation or chimney stack being necessary, they can be erected or removed with very little trouble or expense, and are well adapted for home or foreign use.

Sizes from 6 to 25-horse power.

PORTABLE WINDING ENGINES

On Carriage and Wheels,

With One or Two Drums, suited for Pit Sinking, &c.

STEAM CRANES AND HOISTS, CONTRACTORS' LOCOMOTIVES, &c.

PATENTEES AND SOLE MANUFACTURERS:

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CRANSTONHILL ENGINE WORKS.

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Subscribed capital, £1,000,000. Annual income, £205,000.

£1,120,000 have been paid as compensation.

A fixed sum in case of death by accident, and a weekly allowance in the event of injury, may be secured at moderate premiums.

Bonus allowed to insurers of five years' standing.

Apply to the Clerks at the Railway Stations, the Local Agents, or—

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WILLIAM J. VIAN, Secretary.

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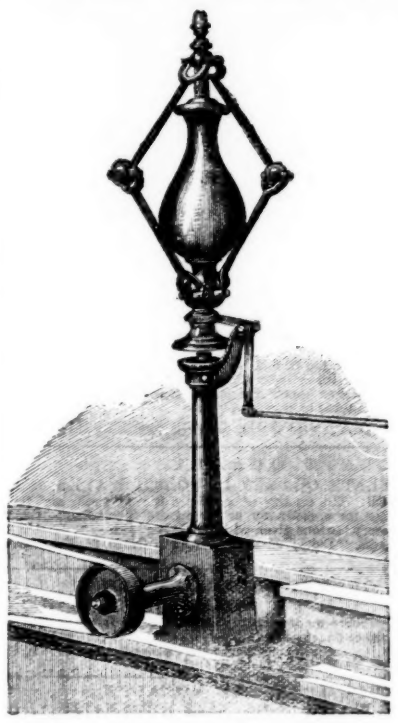

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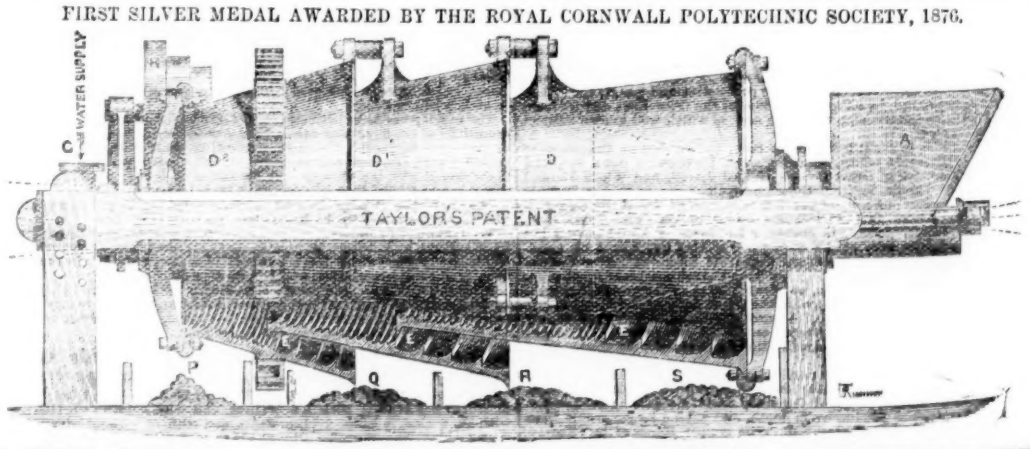

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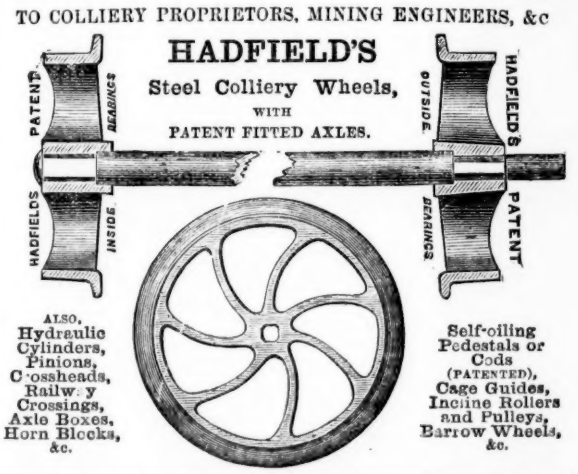

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BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last xd.
[illegible]	Alderley Edge, c, Cheshire*	10 0 0	—	...	12 11 8	5 0	Jan. 1876
15000	Balmynheer, t, Wendron (4000 to 1s.)	1 0 0	—	...	0 2 0	0 2	Nov. 1875
30.00	Bampfylde, c, t, mn., Devon*	1 0 0	1⅝ ..	1¾ 1⅝	0 2 0	0 2	June 1875
200	Botallack, t, c, St. Just†	119 5 0	25 ..	20 25	619 15 0	5 0	Aug. 1872
4000	Brookwood, c, Buckfastleigh	1 16 0	1¼ ..	1¼ 1¼	3 16 0	0 2	Nov. 1875
2000	Bryn Alyn,* l, Denbigh. (10l. sh.)	8 0 0	7½ ..	7 7½	0 7 0	0 7	Jan. 1877
3848	Cargoll, s-l, Newlyns	6 9 0	4	3 4	4 16 3	0 12 6	Oct. 1872
6400	Cashwell, l, Cumberland*	2 10 0	2¾ ..	2 2¼	1 9 6	0 2 0	Aug. 1876
1000	Carn Brea, c, t, Illogan†§	76 7 6	30 ..	26 28	308 0 0	1 0 0	Feb. 1874
2450	Cook's Kitchen, t, Illogan†§	23 9 9	1½ ..	1 1⅛	11 17 0	0 7 6	Jan. 1873
10240	Devon Gt. Consols, c, Tavistock†*	1 0 0	4½ xd.	4⅛ 4⅜	116 15 0	0 5 0	July 1877
4296	Dolcoath, c, t, Camborne	10 14 10	30 ..	26 28	111 11 3	0 5 0	July 1877
5000	East Black Craig,* l., Scotland	5 0 0	—	...	0 10 0	0 10 0	Feb. 1877
6144	East Caradon, c, St. Cleer†§	2 16 6	1 ..	⅜ ½	14 19 0	0 2 0	Oct. 1872
300	East Darren, l, Cardiganshire	32 0 0	—	...	235 10 0	1 0 0	Aug. 1876
6 00	East Pool, t, c, Illogan	0 9 9	10 ..	⅛ 10	15 2 3	0 2 0	June 1877
2500	Foxdale, l, Isle of Man*†	25 0 0	—	...	82 5 0	0 10 0	Feb. 1876
40000	Glasgow Cara., c* [30,000 £1 p., 10,000	15s. p.]	1¾ ..	1 1¾	0 12 10	0 0 6	Mar. 1877
15000	Great Dyliffe,* l, Montgomeryshire	4 0 0	4	3 4	0 2 6	0 2 6	Apr. 1876
15000	Great Laxey, l, Isle of Man*	4 0 0	21 ..	20 21	22 3 0	0 10 0	July 1877
615	Great Retallack, l, bl, Perranzabuloe	5 18 6	—	...	0 1 6	0 1 6	May 1876
25000	Great West Van, c, Cardigan,* pref.	2 0 0	⅜ ..	¼ ⅜	0 2 0	0 0	Aug. 1874
6400	Green Hurth, l, Durham*	0 8 0	2⅞ ..	2⅝ 2⅞	1 15 0	0 3 0	Aug. 1877
20000	Grogwinion, l, Cardigan*	2 0 0	4	3 4	0 12 0	0 4 0	Feb. 1877
9830	Gunnislake (Clitters'), t, c	5 5 0	2¾ ..	2½ 2¾	0 13 9	0 1 0	Oct. 1876
1024	Herodsfoot, l, near Liskeard†	8 10 0	4	4⅜ 4⅝	62 5 0	0 15 0	Oct. 1872
18000	Hingston Down, c, Calstock*†	0 4 0	⅛ ..	⅛ ⅜	0 1 0	0 1 0	Nov. 1876
6000	Holmbush, d, c, s-l, Callington*	1 0 0	1¾ ..	1½ 1¾	0 2 6	0 0 6	July 187
2500	Killiane, s, Tipperary	1 0 0	—	...	0 3 11½	0 0 6	May 1878
20000	Leadhills,* l, Lanarkshire	18 15 0	6¼ ..	5¾ 6¼	0 6 0	0 0 6	April 1877
[illegible]	Llanbadarn, s, Cardiganshire	[illegible]	80 ..	75 80	581 10 0	1 0 0	May 1877
14000	Llanidloes,* l, Montgomery	3 0 0	3	2 3	0 9 6	0 4 6	Nov. 1876
5120	Lovell, t, Wendron	0 16 0	—	...	0 17 6	0 1 6	Jan. 1874
9000	Marke Valley, c, Linkinhorne	5 0 6	1½ ..	1¼ 1⅜	7 15 0	0 2 0	Jan. 1876
6000	Minera Mining Co., s, Wrexham*	5 0 0	18 ..	16 18	67 0 2	0 4 0	May 1877
26000	Mining Co. of Ireland, ci, c, l*	3 9 6	—	...	23 11 6	0 3 6	Jan. 1876
444	North Busy, c, Chacewater	2 10 0	—	...	1 10 0	0 2 6	June 1877
10.89	North Hendre, l, Wales	12 2 0	—	...	4 13 0	0 12 0	Sept. 1873
2000	North Levant, t, c, St. Just§	1 0 0	—	...	0 0 9	0 0 9	Feb. 1874
27855	Old Treburgett,* s-l, ordinary shares	0 10 0	⅜ ..	⅛ ⅜	0 1 4½	0 0 6	July 1874
9258	Old Treburgett,* s-l (10 per ct. pref.)	0 8 6	7⅛ ..	7 7¼	0 9 0	0 9 0	June 1877
6000	Pedn-an-drea Con., t, Redruth	3 0 0	2¾ ..	2½ 2¾	3 13 6	0 2 0	July 1876
5000	Penhalls, t, St. Agnes	5 0 0	5½ ..	5 5½	0 5 0	0 5 0	Mar. 1877
6000	Pennant, l, bar, North Wales*	2 0 0	¼ ..	⅛ ⅜	0 2 8	0 0 8	Nov. 1876
45193	Penstruthal,* t, c, Gwennap	3 4 9	4¼	4 4¼	2 9 6	0 4 0	Nov. 1877
12000	Phœnix, & W. Phœnix, t, c, Link.§	1 0 0	2¼ ..	1¾ 2¼	0 14 0	0 1 3	Jan. 1876
18000	Prince Patrick,* s-l, Holywell	21 6 7	—	...	104 12 6	0 10 0	Sept. 1872
400	Providence, t, Lelant†§	7 10 0	9½ ..	8¾ 9¼	7 10 0	0 8 0	May 1877
12000	Roman Gravels, l, Salop*	1 5 0	120	100 110	738 10 0	2 0 0	July 1877
512	South Caradon, c, St. Cleer	8 5 6	8 ..	7½ 8	2 12 0	0 6 0	May 1877
6123	South Condurrow, t, c, Camborne§	3 0 0	3½ ..	2¾ 3¼	0 3 0	0 3 0	Jan. 1877
12000	St. Harmon,* l, Montgom	1 0 0	—	...	0 7 0	0 1 0	Oct. 1875
10000	So. Fr. Patrick,* s-l, (8000 sh. issued)	6 0 0	7¼ ..	7⅛ 7⅜	4 17 0	0 5 0	Dec. 1876
12000	Tankerville, l, Salop*	9 0 0	15 ..	13 15	50 8 6	0 5 0	May 1877
6000	Tincroft, c, t, Pool, Illogan†	4 5 0	36 ..	32 33	21 11 6	0 16 0	June 1877
15000	Van, l, Llanidloes*	12 10 0	16 ..	14 16	55 0 0	0 10 0	Jan. 1877
3000	W. Chiverton, l, Perranzabuloe†	10 0 0	13 ..	11 13	1 19 0	0 4 0	July 1876
1783	West Poldice, St. Day	95 10 0	63 ..	61 63	20 15 0	1 0 0	June 1877
512	West Tolgus, c, Redruth	28 1 3	2½ ..	2 2½	3 12 6	0 5 0	Oct. 1872
2048	West Wheal Frances, t, Illogan	12000	West Wye Valley,* l, Montgomery	3 0 0	4½ ..	3 4	0 6 0	0 3 0	Nov. 1876
512	Wheal Basset, c, Illogan†§	21 2 6	8 ..	6 8	638 10 0	1 10 0	Aug. 1872
1024	Wheal Eliza Consols t, St. Austell	20 0 0	—	...	13 0 0	1 0 0	May 1877
2048	Wheal Jane, t, Kea	2 13 10	1⅜ ..	1¼ 1½	8 5 0	0 5 0	July 187
4298	Wheal Kitty, t, St. Agnes	5 4 6	2 ..	1½ 1¾	11 19 6	0 2 6	Dec. 1874
25000	Wh. Newton, a,c,s,t, Harrowbarrow*	1 0 0	4	3 4	0 2 6	0 0 6	April 18 7
80	Wheal Owles, t, St. Just§	86 5 0	80 ..	75 80	522 10 0	4 0 0	Aug. 1876
6000	Wheal Prussia, t, Redruth	2 0 0	4¾ ..	4½ 4¾	0 4 0	0 1 0	July 18 7
25000	Wicklow c, sul, t, Wicklow	2 10 0	—	...	52 9 0	0 2 6	Mar. 187
10000	Wye Valley, l, Montgomery*	3 0 0	4½ ..	3½ 4½	0 10 6	0 4 6	Oct. 1876

FOREIGN DIVIDEND MINES.

85500	Alamillos, l, Spain*†	2 0 0	2 ..	1¾ 1¾	1 17 3	0 1 0	Mar. 1877
30000	Almada and Tirito Consol., s*†	1 0 0	⅜ ..	⅛ ⅜	0 6 3	0 1 0	May 1876
20000	Australian, c, South Australia†	7 7 6	2¾ ..	1¾ 2¾	0 18 0	0 2 6	Aug. 1876
10000	Battle Mountain,* c, (6240 part pd.)	5 0 0	—	...	0 10 0	0 10 0	Nov. 1875
15000	Bird-eye Creek, g, California*	4 0 0	⅝ ..	¼ ½	0 14 0	0 2 6	June 1874
12820	Burra Burra,* c, So. Australia	5 0 0	—	...	70 0 0	0 10 0	Oct. 1872
20000	Caps Copper Mining,*† So. Africa	7 0 0	38 ..	37 38	28 15 0	1 0 0	June 1877
40000	Cedar Creek, g, California*	5 0 0	½ ..	⅜ ½	0 5 0	0 2 6	June 1873
15000	Chicago, s, Utah*	10 0 0	2½ ..	2 2½	2 8 0	0 4 0	Nov. 1876
65 00	Colorado United, s-l, Colorado*†	5 0 0	1¾ ..	1¼ 1¾	0 13 6	0 4 0	Jan. 1875
10000	Copiapo, c, Chili* (£20 shares)	18 15 0	—	...	7 11 5	0 3 0	May 1877
100000	Don Pedro North del Rey*†	0 18 0	⅛ ..	⅜ ⅛	2 5 9	0 2 0	Mar. 1872
23500	Eberhardt and Aurora, s, Nevada*†	10 0 0	6⅝ ..	6 6½	1 8 0	0 3 0	Dec. 1876
70000	English and Australian, c† S. Aust.	2 10 0	1⅛	1¼ 1⅛	2 15 9	0 1 0	Mar. 1877
30000	Flagstaff, s, Utah*	10 0 0	3¼ ..	2¾ 3¼	4 2 0	0 5 0	July 1873
28000	Fortuna, l, Spain*†	2 0 0	6 ..	5 6	6 9 2	0 6 8	Mar 1877
55000	Frontino & Bolivia, g, New Gran.*†	2 0 0	3 ..	2¾ 3¼	0 1 0	0 1 0	June 1876
30000	Gold Run, hyd.	1 0 0	—	...	0 2 4	0 0 4	Oct. 1872
68000	Kapunda Mining Co. Australia†	1 3 0	—	...	0 2 4	0 0 6	June 1873
20000	Last Chance, s,* Utah	5 0 0	⅛ ..	⅝ ⅞	0 14 0	0 2 0	July 1873
15000	Linares, l, Spain*†	3 0 0	6½ ..	6 6½	16 17 2	0 9 0	Mar. 1877
65000	London and California, g*†	2 0 0	⅛ ..	¼ ½	0 1 0	0 1 0	July 1875
7237	Lusitanian, Portugal*† (£5 shares)	3 10 0	—	...	1 11 6	0 1 6	Mar. 1873
8000	Mammoth Copperopolis of Utah, c, s	10 0 0	—	...	0 5 0	0 5 0	Dec. 1872
5000	Mountain Chief, s, Utah*	10 0 0	—	...	0 4 0	0 4 0	Jan. 1878
18000	Prussian Mining & Ironworks, ci, s.	30 0 0	—	...	6 0 0	3 0 0	July 1878
10000	Pontgibaud, s-l, France†	20 0 0	27 ..	25 27	23 1 1	1 11 1	Nov. 1876
100000	Port Phillip, g, Clunes*†	1 0 0	⅝ ..	½ ⅝	1 8 0	0 1 0	Jan. 1877
84000	Richmond Consols, s, Nevada*†	5 0 0	6¾ ..	6¼ 6¾	3 9 0	0 7 6	Oct. 1876
40000	Santa Barbara,* g, Brazil	0 10 0	2½ ..	1½ 2	0 3 9	0 1 3	May 1877
120000	Scottish Australian Mining Co.*†	1 0 0	2 ..	1¾ 2	15 per cent.		June 1877
80000	Scottish Austral. Mining Co., New	0 5 0	⅛ ..	⅜ ⅛	15 per cent.		June 1877
112500	Sierra Buttes, g, California*†	2 0 0	1⅜ ..	1¼ 1⅜	1 16 0	0 2 0	Oct. 1876
60000	South Aurora, s, Nevada*	5 0 0	¼ ..	⅛ ¼	0 14 2	0 2 0	Nov. 1873
£/53000	St. John del Rey*† (£5 stock and multiples dealt in)		250	270	½ year ... 20 p. ct. for Dec.		1876
20000	Tolima, g, s* So. America	5 0 0	—	...	0 11 6	0 6 6	May 1874
25000	Victoria (London)*, g, Australia	1 0 0	¾ ..	⅜ ¾	0 11 10½	0 0 10	Aug. 1876
18000	Western Andes s,* New Granada	5 0 0	—	...	12 per cent. per an.		July 1876
21300	W. Prussian (3500 pref. sh. 10l. paid)	10 0 0	11¾	10¾ 11¼	1 4 0	0 8 0	April 1877

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
20000	Anglo-Australian, g, Victoria*	2 10 0	—	...	...Fully pd.
5000	Anguilla Phosphate, West Indies (4000 issued)	10 0 0	—	...	...Fully pd.
12000	Argentine, g, Argentine Republic	5 0 0	4¼ ..	4¼ 4¾	...Fully pd.
10000	Australian Central, g* (also 6000 deferred shares)	1 0 0	—	...	...Fully pd.
3000	Bellavista, s, Peru* (£10 shares)	10 0 0	—	...	...Fully pd.
30000	Blue Tent, hyd., California	5 0 0	3¼ ..	3 3¼	...Fully pd.
35000	Cesena Sulphur Company, Romanga, Italy*	10 0 0	—	...	...Fully pd.
50152	Chontales, g, s, Nicaragua*†	2 0 0	⅝	⅜ ⅝	...Fully pd.
16000	Condes of Chili, s-l	5 0 0	3¼ ..	2¾ 3¼	...Fully pd.
35000	Excelsior Hydraulic Gold Washing Co., California*	5 0 0	—	...	...Dec. 1871
100000	Exchequer, g, s, California*†	1 0 0	⅜ ..	¼ ⅜	...Fully pd.
40000	Holcombe Valley, g,* California	1 0 0	—	...	...July 1873
8000	Hornachos,* s-l, Spain	10 0 0	—	...	...Fully pd.
12000	Hultafall,* l, bl, Orebro, Sweden	5 0 0	6¼ ..	5¼ 6¼	...Fully pd.
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	—	...	...Fully pd.
60000	I. X. L., g, s, California*	1 0 0	⅛ ..	⅜ ⅛	...Fully pd.
50000	Javali, g, Nicaragua*	2 0 0	⅛ ..	⅜ ⅛	...Fully pd.
3500	La Manche, l, Newfoundland	10 0 0	⅛ ..	⅜ ⅛	...Fully pd.
12000	Lanestosa,* i, z, Viscaya, Spain (£2 shares)	1 15 0	—	...	...Fully pd.
75000	Malabar, g, Colombia* (67165 issued)	1 0 0	—	...	...Mar. 1876
4000	Malpaso, g, Colombia* (7400 pref. shares, fully paid)	1 0 0	⅞ ..	⅝ ⅞	...Fully pd.
12000	Menzenberg, c, Honnef, Germany*	5 5 0	¾ ..	⅝ ¾	...Fully pd.
4588	New Bensberg, t, l, Germany	5 0 0	—	...	...Fully pd
60000	New Quebrada, c, Venezuela*	5 0 0	—	...	...Nov. 1876
20000	New Zealand Kapanga, g, Coromandel*	5 0 0	2⅛ ..	1⅞ 2⅛	...Fully pd.
3000	Oregon,* g, Oregon, U.S. (preference shares)	4 0 0	2⅛ ..	2¼ 2⅜	...Fully pd.
50000	Panuicillo, c, Chili*† (£20000 debentures)	4 0 0	—	...	...Sept. 1875
80000	Pestarena United, g, Italy*†	3 0 0	1½ ..	1 1¼	...Fully pd.
50000	Providencia and New Rosario, s, Mexico*	1 0 0	⅜ ..	⅛ ⅜	...Fully pd.
50000	Rica, g, Colombia* (40000 issued)	1 0 0	—	...	...Fully pd.
£2,1=1,000	Rio Tinto,* c, Huelva, Spain	Stock	¼ ..	⅛ ¼	...Fully pd.
100000	Rossa Grande, g, Brazil*† (£1 shares)	0 19 0	55 ..	53 55	...Fully pd
30000	Russia Copper, Orenourg and Ufa*†	10 0 0	⅛ ..	⅛	...July 1872
25000	San Pedro, c, Chili*	2 0 0	2¼ ..	1¾ 2¼	...Fully pd.
10000	Silver Plume, s, Colorado*	2 0 0	⅜ ..	⅜ ⅜	...Fully pd.
30000	Tecoma, s, Utah*	1 0 0	—	...	...Fully pd.
20000	Thornhill Reef, g, Australia*	10 0 0	⅛ ..	¼ ⅛	...Fully pd.
43174	United Mexican, s, Mexico*†	1 0 0	—	...	...Fully pd.
14000	Utah, g, s-l, Utah*	28 15 3	2 ..	1½ 2	...May 1875
75000	Yorke Peninsula, c, South Australia	5 0 0	—	...	...Fully pd.
40000	Yorke Peninsula, c, South Australia Preference	1 0 0	⅜ ..	⅛ ⅜	...Fully pd.
1	Yorke Peninsula, c, South Australia Preference	1 0 0	1½ ..	⅞ 1⅛	...Fully pd.

§ Have made calls since last dividend was paid.

FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

	Closing Prices.	
Argentine, 1868, 6 per cent.	65	67
Bolivia, 6 per cent.	20	22
Brazilian, 1865, 5 per cent.	94	96
Chilian, 1866, 7 per cent.	100	102
City of Providence, 5 p.c. coupon bonds	98	100
Egyptian, 1868, 7 per cent.	—	—
Do., unified debt, scrip	38⅛	38⅛
Do., 7 per cent., V.M.L.	67	69
Do., 9 per cent. guar.	73	75
7 per cent., K.M.L.	44	46

	Closing Prices.	
Foreign and Col. Gov. Trust, 6 p. cent.	62	67
Do., 5 per cent., 2d issue	46	51
Do., 6 per cent., 3d issue	47	52
Do., 1872, 4th issue	47	52
Do., 1873, 5th issue	46	51
Peruvian, 1870, 6 per cent.	12½	13½
Do. 1872, 5 per cent.	10½	11½
Russian, 5½ per cent. L. Mort.	70	73
Spanish, Quicksilver Mort. 5 p. cent.	91	93
United States Mort., 6 per cent.	90	92

b, blende; bl, coal; c, copper; g, gold; l, lead; s, silver; sl, slate; s-l, silver-lead; t, tin; z, zinc.

*Limited Liability Companies; † quoted on the Stock Exchange; ‡ have paid dividends.

NON-DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. pr
40000	Aberdaunant, l, Llanidloes*	1 0 0	1⅜ ..	1⅛ 1⅜
10000	Aberystwith,* s-l, Cardigan	5 0 0	—	...
80	Albion,* t, Cornwall	100 0 0	—	...
7800	Alvig. & Burng.,*t, St. Aust.	3 0 0	3⅛ ..	3⅛ 3⅜
18000	Ambrose Lake, t, c, Liskeard	1 18 6	—	...
12000	Assneton, l, Carnarvonshire*	5 0 0	1½ ..	1¼ 1½
50000	Ballycummisk,* c, Schull	2 0 0	—	...
12000	Bedford United, c, Tavistock	1 19 6	½ ..	⅛ ⅜
78000	Belstone,* c, Devon (27,000 fy. pd.)	1 0 0	—	...
15000	Blaen United,* s-l, Cardigan	1 0 0	—	...
3937	Bine Hills, t, c, St. Agnes	3 7 6	—	...
30000	Bodidris,* l, bl, Denbighshire	1 0 0	1¼ ..	1 1¼
1000	Bollihope Vale,* s-l, Durham	5 0 0	6 ..	5½ 6
2000	Bowden Hill,* mn	1 0 0	—	...
6000	Bradwell Moss Rake	1 0 0	1 ..	⅞ 1
40000	Caldbeck Fells, l, Cumberland*	2 0 0	—	...
50000	Cambrian,* s-l, c, Cardiganshire	2 0 0	2¼ ..	2 2⅛
15000	Cathedral, t, c, Gwennap*	1 10 0	1⅛ ..	1 1⅛
30000	Central Foxdale, l, I. of Man* (2l. sh.)	1 5 0	—	...
10000	Central Van,* l, bl, Llanidloes	5 0 0	—	...
128	Clementina, l, Llanrwst	20 0 0	—	...
7500	Combellack,* t, Wendron	2 0 0	3 ..	2⅛ 3
8000	Combmartin, s-l, North Devon	0 8 0	⅛ ..	⅜ ⅛
24 0	Court Grange, s-l. (6000 sh. 0s. pd.)	1 0 0	1⅝ ..	1⅜ 1⅜
20000	Cwm Dwyfor,* c, s-l, Carnarvonsh	0 15 0	—	...
6 00	Cwm Lanarch,* s-l, Carnarvon	5 0 0	5½ ..	5 5½
3000	Cwmystwith (New) [5l. shares]	4 0 0	—	...
512	D'Eresby Mountain, l, bl, Llanrwst	20 0 0	—	...
10000	Denbighshire Consolidated, l*	3 0 0	1¾ ..	1¾ 1¾
12000	Derwent,* l, Durham	4 0 0	3¾ ..	2¾ 3¼
10000	Dubby Syke, l, Durham*	0 12 6	⅛ ..	⅛ ¼
4000	East Chiverton, l, Perranzabuloe	6 14 6	2½ ..	2 2½
3000	East Craven Moor, l, Pateley Bridge	10 0 0	10½ ..	10 11
600 0	East Goginan, l, Cardigan	2 0 0	—	...
18000	East Van, s, Llanidloes*	5 0 0	6 ..	5⅜ 5⅝
20000	Elgar,* s-l, Cardiganshire	1 0 0	1¼ ..	1 1¼
5000	Frank Mills, l, Christow	5 6 0	⅜ ..	⅛ ⅜
8000	Fronvellan, l, Mont.* (4000 sh. fy. pd.)	1 0 0	—	...
3950	Gawton, c, Tavistock	4 3 6	⅜ ..	⅛ ⅜
12000	Glan Clwyd,* l, Gwyddelwern	1 0 0	—	...
14000	Glenroy,* s-l, Isle of Man	4 0 0	1¼ ..	1 1¼
10000	Glyn,* l, Llanidloes	2 0 0	⅜ ..	⅛ ⅜
12000	Goginan, & Level Newydd, Card., l	2 10 0	—	...
100000	Gold, g, Merionethshire	1 0 0	—	...
20000	Goren,* s-l, Carmarthen	1 0 0	1¼ ..	1⅛ 1¼
7500	Gorsedd and Merllyn Cons., l, Flint	2 10 0	5½ ..	5 5¼
20000	Gt. E. Foxdale, l, I. of Man (1l. sh)	0 18 0	—	...
9500	Great Pant-y-Pydew, l, Holywell	2 0 0	—	...
6000	Gt. Wheal Eleanor, t, North Bovey	1 0 0	3	2 3
18000	Grosvenor, l, Holywell (£1 sh.)	0 15 0	—	...
10000	Harehope Gill,* l, Durham (£1 sh.)	0 5 0	—	...
8400	Harwood,* l, Durham	0 15 0	1	⅞ 1
5000	Hush Eisteddfod Minera,* l	2 0 0	—	...
200	Islay,* l, Scotland	28 0 0	—	...
4000	Killifreth, t, Chacewater	2 1 0	⅝ ..	⅛ ⅜
25000	Kingston Con., s-l, Stoke Climsland	1 0 0	—	...
12000	Ladywell,* l, Salop	2 10 0	1¾ ..	1 1¼
12 00	Ditto, 10 per cent. pref., 1l. each	0 10 0	⅜ ..	⅛ ⅜
2500	Levant, c, t, St. Just	9 6 6	—	...
25000	Llanrhaidr, l, Montgomery*	2 0 0	—	...
30000	Llanrwst,* l, Carnarvon	2 0 0	—	...
15000	Llwyn Telfy,* s l, Cardigan	1 0 0	4¼ ..	4 4¼
8000	Medlyn Moor, t, Wendron	1 17 4	2 ..	2
2500	Mellancar Copper, Hayle*	2 0 0	2¾ ..	2¼ 2½
6000	Ditto	1 15 0	2 ..	1¼ 2
1000	Mwynfa, l, Carnarvon	3 0 0	—	...
11000	Monydd Gorddu, l, Cardigan* (Red.)	5 0 0	4 ..	3 4
12000	Mount's Bay, c, Marazion	1 0 0	—	...
25000	Nant-y-Ronen, s-l, Cardigan*	1 0 0	—	...
15000	Nascent Copper*	1 0 0	—	...
6000	New Bronfloyd,* l, Cardigan (5l. sh.)	3 0 0	—	...
20000	New Consols, s,c (in liquidation)	—	—	...
3000	New Dolcoath, t, c, Camborne*	3 0 0	1¾ ..	1½ 1¾
20000	New East Foxdale, s-l, Isle of Man	0 15 0	—	...
14000	New Fowey Consols, t, St. Blazey*	3 0 0	2 ..	1½ 2
1492	New Hendra, t, Breage	3 9 0	1¼ ..	1¼ 1⅜
2320	New South Merliyn, l, Flint*	2 10 0	1 ..	½ 1
850	New Wheal Emma, c, Buckfastleigh	2 0 0	—	...
4 00	North Cornwall, l, Cornwall	5 0 0	5¼ ..	5 5¼
17000	North Laxey,* Isle of Man	2 0 0	1⅛	⅞ 1
20000	North Prince Patrick,* i, Holywell	1 0 0	—	...
5936	North Treskerby, c, St. Agnes	3 17 10	—	...
2000	North Wheal Towan, t, c, Illogan	1 19 6	—	...
2500	Old Tincroft, c, t, Lelant*	4 0 0	4	... 3 4
6400	Oola Hills,* s-l, Limerick	5 0 0	—	...
12000	Pandora * l, Carnarvon	2 0 0	—	...
16923	Parys Mountain,* c, Anglesea	3 0 0	⅝ ..	⅜ ⅝
4000	Pateley Bridge, l, Yorkshire	5 0 0	2¾ ..	2 2¼
12000	Pennerley, l, Shropshire*	2 0 0	⅛ ..	⅛ ⅛
30000	Perkins Beach, l, Shropshire	1 0 0	1¾ ..	1 1¾
12000	Plynlimmon, l, Llanidloes*	2 0 0	⅛ ..	¼
848	Polrose, t, Breage	21 0 0	—	...
10000	Port Nigel,* s-l, Carnarvonshire	2 0 0	2½ ..	2 2¼
2000	Prideaux Wood, t, Llanivery	5 0 0	—	...
12800	Prince of Wales, c, Calstock§	2 2 0	3s.	... 2s. 3s.
10000	Red Rock,* l, Cardigan	2 0 0	2⅛ ..	1¾ 2¼
6000	Relistian Consols, c, Gwinear	0 10 0	⅝ ..	½ ⅝
15000	Rookhope, l, Durham*	1 10 0	1⅛ ..	1 1⅛
3000	Russell, s-l, Swymbridge	0 6 0	—	...
5000	Silvercross,* c, t, Marazion	1 0 0	¾	½ ¾
4200	Snowbrook, s-l, Montgomery	5 0 0	5¼ ..	5⅛ 5¼
000	So. Cwmystwith, l, Cardiganshire	2 0 0	4¼ ..	3½ 4⅛
3000	South Darren, l, Cardigan*	1 10 0	—	...
512	South Dolcoath, c, t, Redruth	12 5 0	1¼ ..	1 1¼
18000	South Roman Gravels, l*	1 10 0	¾ ..	½ ¾
6000	South Roskear, t, c, Camborne	6 10 0	5	4 5
6000	South Tolcarne, t, c, Camborne	1 14 0	¾ ..	½ ¾
937	South Wheal Crofty, c, Illogan	37 0 10	11	10 10½
4500	South Wh. Frances, c, Illogan†	7 12 4	⅜ ..	⅛ ⅜
432	Spearn Moor, t, Penzance†	46 17 9	—	...
6000	St. Lawrence, Amal., l, Flintshire*	2 0 0	—	...
10000	St. Patrick, l, Halkin, Holywell*	1 0 0	1⅜ ..	1¼ 1⅜
8000	Success, &c., l, Derb. (12,000l. called)	1 0 0	—	...
16400	Sunnyside,* l, Durham	2 0 0	2½ ..	2 2½
30000	Talyhont, s-l, Cardiganshire	1 0 0	1¼ ..	1 1¼
2400	Teesdale,* c, Durham	1 0 0	1	... ¾ 1
14000	Teign Valley, l, bar., Bridford	1 0 0	—	...
10000	Temple, l, Cardigan*	1 0 0	1¼ ..	1 1¼
10000	Tolgus Consols,* c, Redruth	5 0 0	5¼ ..	5 5¼
12000	Trebeigh Consols, s-l, St. Ive	0 9 0	⅛ ..	¾